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THE LARYNGOSCOPE.

Vol. III.

ST. LOUIS, MO., JULY, 1897.

No. 1.

ORIGINAL COMMUNICATIONS.

THE CLINICAL PICTURE OF ACUTE INFLAMMATION OF THE FRONTAL SINUS.*

BY PROF. GRADENIGO, TURIN.

Translated by Dunbar Roy, M.D., Atlanta.

With the above title I wish to direct attention to a form of sinusitis frontalis which, according to my experience, is easy to diagnose, and is by no means infrequent, but which, on account of its almost latent course, can be confounded with supra orbital neuralgia; it merits, on account of its constant clinical picture, a place in the Nosology, although, as we will see, it represents, according to its anatomical pathologic condition, only a mild form of the classical Sinusitis Frontalis. This affection always follows an acute coryza, but usually several days, even to one or two weeks, intervene between the cessation of the discharge and the beginning of the symptoms of the frontal complications. On account of this intervening period and the relative mild symptoms which the coryza may have, the interval between the two affections usually remains unobserved. The disease begins with pain of the neuralgic bursting type, which has its seat especially in the neighborhood of the frontal sinus; these attacks, which in the beginning are present only a few hours and always in the forenoon,

**Monatsschrift fuer Ohrenheilkunde*, April, 1897.

increase from day to day, both in intensity and duration, until the maximum is reached on the eighth or tenth day. In this stage the pain can exist continually with exacerbations, accompanied by intense flashes of light and tears from the corresponding eye.

In the intervals between the attacks the pain can be precipitated by violent blowing of the nose, rapid moving of the head, etc. The most important symptom for differential diagnosis, on which I will direct especial attention, consists in the fact that striking against the forehead with the finger or the percussion hammer is painful only on the surface which represents the front wall of the diseased sinus. In this manner one can map out the extent of the sinus on the skin. In this circumscribed region there is frequently found hyperæsthesia to the touch. Alterations in the tension of the skin I have not seen. In well marked cases and in individuals with very transparent skull bones, one can note, by putting an electric lamp of strong intensity in the mouth, that the region of the diseased sinus frontalis is darker than that of the healthy side. The rhinoscope in the first period usually shows nothing abnormal; in the period of discharge one can observe a moderate swelling and (which is a very important point for diagnosis) the appearance of a drop of mucous or purulent discharge in the region of the hiatus semilunaris. The disease heals in about two weeks after the discharge of a certain amount of mucous, fibrinous or purulent matter from the corresponding nasal cavity. The discharge will be greatly assisted by inclining the head forward. The secretion can be so profuse that one patient who had this to happen in the dark believed that he had nose bleed. After this, all the symptoms subside by degrees and the patient has left only a predisposition to future attacks.

Such pathologic conditions one can observe in individuals with healthy nasal cavities as well as in such with chronic nasal disease (Ozena, Rhinitis Hypertrophica, etc.); I could not observe that the process was more severe in the last form than in the first.

These complex symptoms lead to the conclusion that this disease, just as the inflammation of the other sinuses, is caused by an extension of the inflammatory process from the nasal cavity; on account of a catarrhal stenosis of the ductus fronto-nasalis there exists a retention of the mucous or muco-pus secretion; such pathologic conditions afterwards heal spontaneously. Furthermore, one can conclude that certain special anatomical relationships of the ductus fronto-nasalis favor the extension of the diseased processes and the extension of the watery secretion, wherefore the complication usually occurs only on one side. In reference to the quality of the secretion,

whether mucous (Mucocoele) or purulent (Empyema) one can observe all the gradations as well by the acute as by the chronic sinusitis. In regard to the treatment, the most severe cases are usually benefitted from the use of phenacetin, and sometimes also in the use of quinine and antipyrin.

Besides, I have found the weak galvanic current of decided benefit with the positive pole on the forehead. In regard to the treatment of the nose, I have found good results to follow if a piece of cotton saturated with a 10% cocaine solution be placed in the region of the hiatus, and if possible still higher, since in the great majority of cases the anatomical relationship does not permit the sounding of the fronto-nasal canal.

Lukewarm, careful douching with the physiological salt solution also gave good results. No marked improvement was seen from general anti-rheumatic treatment.

The sinusitis spoken of above represents a mild form of the acute mucocoele, or of the empyema inclosed in the sinus frontalis, as has been described by other authors; this latter, as we know, is accompanied by more or less marked appearances of external swelling with protrusion of the eye-ball outwards and downwards with endo-nasal lesions, etc. Furthermore, these severe forms which I saw in connection with influenza or ill-advised nasal douching, and which offered clear signs for diagnosis, are capable of healing spontaneously.

A New Method of Permanent Relief of Certain Enlargements of the Turbinate Bodies. (*Medical Record*, June 12, 1897.)

In a paper read before the last meeting of the American Laryngological Society, Dr. D. B. Delavan offered a simple method for the reduction of enlarged turbinates, without producing any loss of mucous membrane. He advocates submucous incisions, by means of a small knife (needle shaped), which he passes under the mucous membrane and makes a sweep through the submucous tissues. He then withdraws the instrument through the original opening without enlarging same. In this manner the vascular coats of the vessels are broken, and clotting of the cavernous tissue takes place.

M. D. L.

EMPHYEMA OF THE MAXILLARY, ETHMOIDAL AND SPHENOIDAL SINUSES ATTENDED BY GENERAL SEPTICEMIA FOLLOWING ATTEMPTED REMOVAL OF INFERIOR TURBINAL BODY—OPERATIONS—RECOVERY.*

BY H. V. WÜRDEMAN, M.D., OF MILWAUKEE, WIS.

Abstracted by N. M. Black, M.D.

W. remarks lack of instruction in text books regarding aseptic preparation and technique in nasal operations. The germicidal quality of nasal-mucous and the resistance of the membrane has been the salvation of many operators.

A man aged 24, attempt was made to remove supposed polypi and left inferior turbinal body by another practitioner. A week later the left side of face was very much swollen, great exophthalmus with chemosis and prolapse of conjunctiva; a slimy discharge from left nares, great pain especially in orbit, temperature 101.5. Electric light trans-illumination showed normal illumination of the right side, of the left absolute opacity; homonymous diplopia was due to exophthalmus. Ophthalmoscopic examination negative.

Sent to hospital, iced applications made to face, saline purge and stimulants given. Twenty-four hours later odema worse, temperature 103.6, pulse weak, strychnin ordered, antrum opened through nares releasing small amount of pus, then opened through canine fossa, discovering more pus. Posterior ethmoidal and sphenoidal cells were also opened relieving more pus. Tube drainage. The edema was not relieved and temperature following day was 104.2; prolapse of conjunctiva and exophthalmus worse, the bulb protruding nearly 1 inch beyond its fellow. Fluctuation of lower lid was noticed and abscess opened in suborbicular furrow allowing escape of two and one-half ounces of foul pus, discovering denuded bone at lower margin of orbit, probe being passed into anterior ethmoidal cells. Tube drainage was used and washed out with antiseptic solution, communication being at once established between this opening, the antrum and nose; temperature immediately dropped; edema disappeared. Continued improvement, stimulants stopped and patient placed on tonics.

5-27-97—Patient has had subsequent operations for removal of inferior turbinal and granulation tissue with continued improvement.

*Read before the Section on Laryngology, Rhinology and Otology of the American Medical Association, Forty-eighth Annual Meeting, held at Philadelphia, Pa., June 1-5, 1879.

EXCISION OF THE TONSILS BY MEANS OF THE GALVANO-CAUTERY SNARE.

BY JOSEPH S. GIBB, M.D., PHILADELPHIA.

Professor of Diseases of the Throat and Nose, Philadelphia Polyclinic; Surgeon-in-Charge of the Ear, Nose and Throat Department, Episcopal Hospital.

Tonsillar hypertrophies assume such diversities of size and form and their construction are so various that no single instrument meets every indication. The essential principle involved in the removal of hypertrophied tonsils, we believe at the present time, is to effect a thorough eradication of the hypertrophied tissue.

The bistoury is seldom used to-day, except by the general surgeon. The tonsillotome is largely employed, and in the majority of cases answers the purpose admirably. In completeness of removal this latter instrument leaves little to be desired, but that its use is not unattended with danger of hemorrhage is attested by the space given to the subject in every text book. Bosworth gives quite a complete history of the cases of hemorrhage following tonsillotomy. Some of these occurred after the use of the bistoury, but the larger number were in cases in which the tonsillotome was the instrument employed. It is interesting to note that all these accidents occurred in adults, and that in no case was it fatal, though in three cases it was necessary to ligate the common carotid artery before the hemorrhage was controlled.

Bosworth further states that, in his experience, troublesome hemorrhage probably follows excision of the tonsils in the larger proportion of cases in adults' life. Whilst this has not been my experience, nor do I believe it is the experience of most operators, still the testimony of so able an observer, and the record of the accidents which have occurred in the past, demonstrates the danger to be not inconsiderable.

It is the dread of hemorrhage which has induced the laryngologist to search for some means of excising hypertrophied tonsils which shall reduce the danger to a minimum. Naturally the snare has suggested itself and the cold wire or ecraseur has long been used for this purpose. This method, however, is tedious, if it is employed closely, which it is necessary to do to accomplish the object desired. It is also quite painful, and, therefore, inapplicable to a large number of persons of the neurasthenic type.

Electricity has given us the means to so heat the wire of the snare

that it cuts its way readily through the soft tissues, and at the same time so clear them in its passage as to close the mouths of the vessels and render the operation practically bloodless.

The difficulties in the past have been that the snares on the market are so constructed as to render this work very unsatisfactory. The universal handle has attached to it a little windlass on which is wound the wire through which the current is to pass.

It is next to impossible to wind any but a very soft wire on this windlass. Wire of this latter construction is not only readily burnt through, but is exceedingly difficult to adapt to the tissues. Platinum wire, which I endeavored to use, was entirely too soft and almost useless.

Later, an irido-platinum wire was tried with little better success. Either the composition was too soft and the same difficulties met with as in the use of platinum, or it was too stiff and fine to be satisfactorily wound around the windlass. Several devices were employed, but on the whole the work was so unsatisfactory the method was abandoned.

My interest in this method of excision was revived by an article of Dr. Henry Gradle, of Chicago, in which was described a very ingenious instrument which seemed to overcome all the difficulties mentioned.

Trial of this instrument has confirmed the belief in its usefulness, and now we are able to use quite a heavy piano wire and accomplish excision in a bloodless manner.

In principle the instrument is not unlike the Sajous snare for the removal of nasal polypi, in that it is threaded with the wire at the extreme end of a trocar which is made to be drawn through a canula.

One awkward feature of the instrument is the position of the key which controls the current. This is placed on the wires some distance from the handle of the instrument and is supposed to be controlled by a finger of the hand which lifts the tonsil from its bed by the tenaculum. In some cases it is necessary to use a tongue depressor to keep the tongue out of the way. I have found considerable difficulty in manipulating the instrument with one hand and with the other using tongue depressor, tenaculum and controlling the key. Perhaps with more familiarity in the use of the instrument the requisite skill may be acquired. It has occurred to me, however, that it is not beyond the skill of the electrician to construct a key in some position on the handle so that it might be controlled by a finger of

the hand used to withdraw the canula. The other hand would then be left free to withdraw the tonsil from its bed and depress the tongue. I have used this instrument in the following manner:

Placing the loop of wire around the tonsil an assistant grasps the tonsil through the loop by means of a tenaculum and withdraws it from its bed.

The operator depresses the tongue with his left hand and adjusts the loop about the tonsil with his right hand until it is grasped by the tenaculum in the hands of the assistant; he then removes the spatula and uses the left hand to control the key whilst the assistant keeps the tongue out of the way by means of the handle of the tenaculum.

The right hand is used to manipulate the snare. The trocar is slowly withdrawn into the canula until the tonsil is firmly grasped at such position as is desired. The current is then turned on and is interrupted, or not, as may be deemed necessary or expedient.

The galvano-cautery snare, as perfected by Dr. Gradle, is a distinct addition to our means of attacking this very common malady; that it will supersede older and well-tried methods is not at all probable. A brief study of its advantages and disadvantages may not be profitless.

There are, in children, a large number of rounded and irregularly-shaped tonsils which fill the fauces. This group can be left for the tonsillotome, which does its work thoroughly, and with little or no danger.

There are, however, tonsils of this type which present a vascular appearance with, perhaps, large veins coursing across the surface. Whilst it has not been my misfortune to have had alarming bleeding in cases of this description, it has not been without some little trepidation excision was accomplished. Excision by the snare could here be effected with as much ease and less danger.

Another class of cases belonging to this group are those in which the pillars of the fauces are so stretched out over and adherent to the tonsil as to defy all attempts at separation.

Wounding of the pillars of the fauces is exceedingly apt to give rise to troublesome bleeding, hence again in this class the galvano-cautery seems indicated, for while we wound the pillars we so sear the tissues as to prevent bleeding.

In adults, and especially those in which the tonsils present a hard, fibrous appearance, there is danger of alarming bleeding.

Inasmuch as the galvano-cautery snare removes these tonsils as quickly, as painlessly and as thoroughly as the tonsillotome, and as it is nearly devoid of danger, there is no good reason to omit its use.

We may then include all cases of hypertrophied tonsils in adults as suitable for the use of the galvano-cautery snare, and it is just in this class this instrument will find its largest field of usefulness.

There is not an inconsiderable class in which personal peculiarities may or should influence the operator's judgment. Nervous, irritable subjects, either adult or child, in whom the dread of a cutting instrument is almost unconquerable, will make up a class which may be justly considered suitable for the snare.

Those forms of hypertrophied tonsils which do not project greatly towards the median line, but rather fill the space between the anterior and posterior pillars and extend downwards, are the most difficult with which to deal. The tonsillotome is almost useless, nor does the galvano-cautery snare help us. It is, perhaps, in this type of tonsil that the scissors of Bliss find their greatest usefulness.

The types and divisions might be multiplied, but sufficient has been shown to prove that the galvano-cautery snare has a distinct position in the surgery of hypertrophied tonsils.

As to its work and effects:

The galvano-cautery snare, used with a rather thick piano wire, cuts through the tonsillar tissue in a clean, quick manner, much the same as cutting through cheese with a knife. It is nearly painless when cocaine or eucaine has preceded its use. It is nearly a bloodless operation. The snare may be made to adapt itself to the hypertrophied tissue at its very base, so that more tissue is removed than with the tonsillotome.

It is not always an easy matter to limit the extent of the cauterization. In some cases we find, after the removal of the tonsils, that either through some slight movement, on the part of the patient, or by radiation of the heat, the cauterizing effect has not been confined to the site of the tonsils, and there is a large granulating surface. The wound, after galvanic-cauterization, is quite a formidable-looking affair. Seen by one with no knowledge of the previous operation, it might easily be mistaken for diphtheria, the wound being covered by a whitish slough, or rather eschar, and the surrounding tissues oedematous.

This appearance persists for several days or a week, and is succeeded by a clean, healthy, granulating surface.

In ten days or two weeks the wound has completely cicatrized, the surrounding tissues assumed a normal appearance and all symptoms disappeared.

The reaction, after the use of the galvano-cautery snare, is apt to be more severe than is seen where the tonsillotome is the method em-

ployed. In all my cases there has been more or less systemic disturbance. In one case, a boy, aged 12, the day following the excision there was high fever, heavily coated tongue, anorexia, constipation and general malaise. These symptoms lasted two or three days. Usually, however, the unpleasant symptoms are of short duration. The throat is quite sore. The voice is much altered in character, in consequence of the œdema which is nearly always present.

This hoarseness, or alteration, of voice disappears in two or three days. The throat remains sore for a week. The ultimate result leaves little to be desired.

817 Franklin St.

Papilloma of the Nasal Septum, by Dr. A. Logan Turner, Edinburgh.

The tumor, the size of a small orange, was removed from a male, 52 years of age. It resembled a malignant growth, microscopically, but the microscope showed it to be a true papilloma, consisting of a delicate, branching, connective tissue framework containing many blood-vessels with ill-defined walls, and everywhere covered with many layers of epithelial cells, distinctly demarcated from the adjacent tissue.

The patient complained of nasal obstruction, epistaxis, constant discharge, loss of the sense of smell, and dimness of vision on the same side (right). The growth was removed by means of an external operation. An incision being carried from the right inner canthus, down the side of the nose, around the right ala and through the centre of the lip. The growth occupied the whole of the fossa. The superior, middle and inferior turbinated bones of the same side had been absorbed by the pressure of the tumor, which was attached to the bony septum about its middle portion by a broad base. It resembled a typical cauliflower mass, and measured six and a half inches in circumference. Four months after the operation no return of the growth was noticed.

M. D. L.

PAPILLOMA OF THE LARYNX RECURRING AS AN EPITHELIOMA—REPORT OF A CASE.*

BY M. R. WARD, M.D., PITTSBURG, PA.

The question of the possibility of the malignant degeneration of benign laryngeal growths, the frequency of this accident and the influence of operative procedure in promoting such transformation, has been so fully presented in laryngological literature during the past decade, that the subject might be regarded as entirely exhausted were it not for the fact that some of the most prominent representatives of our specialty still take such antagonistic positions on almost all the points at issue. We cannot expect that the ghost will be finally laid until a more harmonious state of affairs arises from the clash of conflicting opinions. At the present time we wish to submit a case of interest in this connection, with a few remarks as to the present status of the subject under consideration.

The subject as above indicated, naturally gives rise to three leading questions—the possibility of such transformation, its frequency and the effect of operative interference in bringing it about.

The first point, viz.: The possibility of the malignant degeneration of innocent neoplasms is so closely connected with the interminable question of the etiology of carcinoma in general, that its discussion would not be in place on this occasion. Few laryngologists would be bold enough to absolutely deny this possibility; it may, however, be remarked that those who follow that insistent and industrious minority of pathologists, who look upon carcinoma as a specific infection, whether due to coccidia, blastomycetes, or what not, are obviously obliged to answer the question in the negative, and all cases of so-called transformation are explained by a super-infection or a mistaken diagnosis of the original growth.

If, on the other hand, with the majority of pathologists, we regard the origin of cancer as epitheliogenetic we can readily admit the possibility of a neoplasm originally benign taking on all the characteristics of malignancy, and as laryngologists, we are chiefly interested in determining in what proportion of cases this transformation takes place, and what effect operative interference has in bringing about this unfortunate accident. In our opinion, little light can be thrown upon these questions by theoretical deduction at the present time.

*Read at the meeting of the American Laryngological, Rhinological and Otological Society, Washington, D. C., May 1-3, 1897.

They can only be decided by the collation of statistics based upon accurate and candid reports of such cases as come under our observation.

The case I wish to report is as follows:

Miss M. W., age 17, of German parentage, and the eldest of a family of ten children, all living.

Family history: negative as to carcinoma.

Personal history: had measles during childhood. In December, 1893, she had an attack of epidemic influenza, from which she soon recovered; but on trying to sing, she noticed her voice was husky. There was no cough nor dysphagia. The hoarseness continued to grow worse, and in February, 1894, she consulted a physician, who told her she had a growth on her vocal chord, which he treated by applications and sprays to the larynx, with little or no improvement.

In July of the same year, she consulted Dr. Day, of this city, who removed the growth, which was no larger than a pea, pale pink in color, and grew from the left vocal chord near the anterior commissure. The doctor states very positively that there was at this time no question in his mind as to the entirely benign character of the growth, and the microscopic examination made by a competent pathologist confirmed his diagnosis of papilloma. For a short time her voice improved only to again relapse into its former condition, growing gradually worse until November 6, 1895, when she consulted me.

An examination at this time showed the nose and the naso-pharynx to be comparatively normal. On laryngoscopic inspection, the ventricular bands were inflamed and swollen, the arytenoids freely movable. The anterior half of the left vocal cord was completely destroyed by ulceration. The ulcer presented a ragged, irregular, reddish appearance, and surrounding it was an infiltration of the submucous tissue immediately below the left vocal cord, and involving the entire left half of the larynx. The right cord was congested and swollen, leaving the chink of the glottis narrowed to one-third its normal size. The voice was entirely lost.

Excluding tuberculosis by physical and microscopical examinations, I gave the patient specific treatment in the hope that the ulcer might be syphilitic. Potassium iodide was rapidly increased to one drachm three times a day, while inunctions of mercurial ointment and pill proto-iodide were pushed to their full physiological effect. This treatment was supplemented by cleansing sprays and powdered iodoform to the larynx, and continued for two months, the patient growing worse all the while, the ulceration extending toward the left arytenoid, the infiltration and swelling increasing until the dyspnoea became so alarming that a tracheotomy was necessary.

On the advice of Dr. Delavan, of New York, to whom I described the case, the larynx was sprayed with absolute alcohol in the hope that the disease might be a simple papilloma. The result was disappointing, for at the end of two weeks I was obliged to discontinue the treatment on account of its irritating influence on the already inflamed larynx. This I regarded as confirmatory evidence in favor of malignancy, which I had all the while suspected. But on account of the growth being subcordial, and the chink of the glottis so narrow, it was impossible to remove a portion large enough for a microscopical examination.

On March 10, 1896 (one month after the tracheotomy), the following condition of the larynx existed: Fixation of the left, and very slight movement of the right arytenoid; inter-arytenoid space tumid and œdematous; ventricular bands obliterated by the infiltration and swelling from ulceration of the left vocal cord; the anterior two-thirds of the left vocal chord completely destroyed; the chink of the glottis in full inspiration probably reduced to one-fifth or less of its normal size, through which can be seen, on the left side of the larynx, numerous irregular, nodular masses of diseased tissue, bright red in color. No hæmorrhage until this date. The patient has paroxysmal attacks of coughing; considerable expectoration consisting of white frothy mucous, sometimes streaked with blood, and occasionally containing shreds of necrotic tissue. Some fetor of the breath; complaints of tenderness over the larynx; sharp shooting pains in the left ear. She is pale, cachetic and losing in flesh, although her appetite is good and she sleeps well. There is no enlargement of the cervical glands.

I then had Dr. Daly see the patient with me for the second time. In discussing the case, he remarked: "The disease is unmistakably extending, and, judging from the appearance and clinical history of the case, I would consider the growth malignant."

The patient was sent to the Mercy Hospital for a thyrotomy, which was performed by Dr. Stewart and myself on March 14, 1896. On opening the larynx numerous nodular masses of new-formed tissue were found beneath the left vocal cord. These were removed by curved scissors and the entire left half of the larynx thoroughly curetted. The cartilages of the larynx were to all appearances healthy. The hæmorrhage was moderate and easily controlled. The wound was packed with iodoform gauze and dressed open for the first twenty-four hours, at the end of which time the gauze was removed and the edges approximated by adhesive plaster.

The operation and after-treatment were unattended with any inci-

dent worthy of note, and on the fifteenth day the patient was able to come to my office.

Portions of the growth were submitted to Dr. Eugene Wasdin, U. S. M. H. S., who kindly furnished me the following report:

"The specimen removed from the larynx, at the anterior attachment of the true vocal cords, gives, in frozen sections stained in hæmatoxylin and eosin, a newly formed connective tissue stroma supporting masses of epithelial cells, squamous in appearance. There is also an increased growth of the follicles common to this mucosa; many showing well-formed ciliated epithelium, others being lined with columnar cells markedly embryonal, or filled with such proliferated young cells. The connective tissue is quite vascular and there is small-celled infiltration. The presence of the flat or squamous cells in this locality, below the normal line of their distribution, gives rise to serious apprehension of the return of the growth; whilst the retrogression of the glandular epithelial cells into their embryonal condition, indicates that such return will prove the malignancy foreshadowed in this picture of mixed epithelial growth, adeno-epithelioma."

The disease soon showed evidence of return and a laryngectomy was decided upon and performed by Dr. Stewart at the Mercy Hospital, June 17, 1896, in the presence of some of the members of the American Laryngological Association, which was in session in Pittsburgh. At this time there was no recognizable lymphatic involment. In order to eradicate the diseased tissue it was found necessary to remove the entire larynx, with epiglottis and a portion of the anterior wall of the œsophagus. The trachea was stitched to the lower edge of the wound and a tracheotomy tube inserted. The wound was closed and on the third day an œsophageal tube was introduced through which the patient was nourished. The wound healed almost throughout by primary union and convalescence was uncomplicated. The disease first showed its return in the cicatrix about the 8th of August. This was soon followed by enlargement of the lingual and cervical glands. The patient died from exhaustion on October 25, more than four months after the laryngectomy.

The case related exhibits a number of unusual features, among them the rather uncommon location of the growth, and the very exceptional age of the patient. We will, however, pass over these points without comment, and proceed to briefly refer to the present status of the question of the malignant degeneration of benign tumors of the larynx, of which this seems to be an unusually well-authenticated example.

The possibility of tumors—clinically and histologically benign—undergoing a malignant transformation was pointed out by the older pathologists, and their dictum on this point has been either tacitly or explicitly accepted by succeeding authorities, notwithstanding the decided difficulty of obtaining absolute proof of such change in any given case. For various reasons, the question in its special bearing on laryngeal neoplasms has excited unusual interest, and perhaps a rather disproportionate amount of discussion. This is, to a certain extent, connected with the tendency among some laryngologists to construct a special and advanced pathology for the larynx, particularly as regards the etiology of intralaryngeal growths. Thus, irritation with resulting hyperæmia and cell proliferation has been assigned a far more prominent role in the causation of laryngeal tumors than it has been allowed by pathologists, when treating of tumors in general. This is not only true of benign growths, but of malignant tumors as well. This position is well illustrated by a quotation from Lennox Browne, who opens a discussion of the etiology of malignant tumors of the larynx with the following remark: ¹. "Promise of profit to be derived from a discussion of the probable causes of malignancy may at first appear as hopeless as the proverbial chastisement of a dead horse; but while this may be, to some extent, true, with regard to malignant neoplasms in general, an exception must be claimed for those in connection with the larynx."

A rather thorough investigation of the literature on the subject at my command, shows distinct change in the attitude of laryngologists toward this entire subject, and Lennox Browne's utterance on this pivotal point would have gained more support ten years ago than at the present time. In marked contrast to this opinion is that of a recent American author, who states: ². "The etiology of laryngeal cancer is as obscure as that of the disease in other parts." Some stress should be laid on this point since it bears a very vital relation to the question of degeneration of benign into malignant growths, especially following operations; for, granting that there are no sufficient reasons for believing that the etiology of cancer of the larynx differs from that of cancer elsewhere, we have an *a priori* consideration against the more frequent occurrence of malignant change in benign tumors here than in other organs. And further, we can, in view of the futility of the immense researches that the pathologists have undertaken in the past few years, afford to entirely ignore any theoretical speculations as to the pathogenesis of carcinoma of the larynx. It follows, therefore, that at present a solution of this question can only be hoped for through an appeal to statistics. Semon

recognized this fact, and in consequence has furnished us with the most solid and convincing contribution to the literature on this subject. His large number of cases so carefully analyzed, has wrought a decided revolution in our views on this question. Browne's original views as to the frequency of malignant degeneration of benign growths, are scarcely tenable to-day, and this distinguished author admits in the last edition of his work that "his experience may have been exceptionally unfortunate."

Gerhardt undoubtedly voices the consensus of opinion, when he states: ³. "F. Semon has proved that cancerous degeneration of originally benign tumors happens seldom and without anyone's fault."

Since Semon's collective investigation, little original material has accumulated, so that we simply append his totals: ⁴.

"No. of observers, 107 (covering 1862-1888).

" " benign tumors observed, 10,747.

" " papillomata, 4,190.

" " intra-laryngeal operations on benign tumors, 8,216.

" " intra-laryngeal operations on papillomata, 3,282.

" " papillomata recurring and requiring repeated removal, 480.

" " cases of spontaneous degeneration, 12.

" " cases of degeneration after intra-laryngeal operations, 31."

Semon, for reasons of varying weight, excludes fifteen of the thirty-one recorded cases of degeneration following operation. Even a few of the cases accepted might readily be objected to by the captious critic. These results, though approximate, are none the less positive, and undoubtedly the main conclusions reached are correct.

Semon himself has pointed out with great detail all sources of error. But, after all, the most formidable stumbling block lies in the difficulty of arriving at a positive diagnosis between carcinoma and papilloma in their earlier stages. Clinically, laryngologists have decided that this may be absolutely impossible. Our only resort then is the microscope. Unfortunately it has so often been found indecisive in the past, that some eminent men are beginning to express doubts as to the value of histological examinations in the diagnosis of laryngeal growths. Such cases as those of Lefferts and Semon, where several pathologists arrived at a different diagnosis in reporting on a specimen submitted for examination, admits of a possible explanation on the hypothesis that the growths under consideration exhibited a heterogeneous structure. Beschorner's experience recorded by Semon, where a tumor that had been pronounced malign-

nant by such eminent authority as Birch-Hirshfeld subsequently pursued a benign course, presents a more puzzling problem.

It may be remarked that the adoption of a more uniform and rigid system of nomenclature by pathologists and laryngologists would eliminate some confusing elements. Thus, the laryngologist scarcely recognizes the familiar papilloma under the designation, *pachydermia verrucosa*. On the other hand, we are surprised, in looking over the reports of older laryngologists (e. g. Fauvel), at the frequent mention of seirrhus and encephaloid, knowing that these forms of carcinoma are uncommon in the larynx.

Finally, ruling out sarcoma on account of its rarity in this location, the problem that usually confronts the pathologist, as far as the larynx is concerned, is the diagnosis between papilloma and squamous epithelioma. The chief source of error here lies in the fact that it may be impossible to differentiate histologically between a simple papilloma and the superficial layers of the malignant growth which so frequently are removed in the form of "papillary out-growths," thus often making the picture of the two neoplasms both macroscopically and microscopically identical, and the laryngologist must recognize the fact, that unless he includes the deeper layers in his specimen the microscopist's opinion is open to doubt and uncertainty.

Thanks to the researches of Semon and others, we are convinced of the rarity of malignant changes in originally benign growths, and, further, it has been established that intra-laryngeal operations have but slight, if any, effect in promoting this transformation. As yet, our present records but roughly approximate the truth, and in order to secure greater statistical accuracy we would urge a more careful clinical and microscopical study of our cases:

1. Burnett's Syst. Diseases of Nose and Throat, vol. 11, p. 767.
2. Delavan in Dennis' Syst. of Surgery, vol. 111, p. 56.
3. Nothnagels Specille Pathol. und Ther.
4. Semon, *Internat. Centralblatt fuer Laryngol, etc.*, 1888-89. Park Building.

Mississippi Valley Medical Association.

The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7 and 8, 1897.

All railroads will offer reduced rates.

The President, Dr. Thos. Hunt Stucky, and the Chairman of the Committee of Arrangements, Dr. H. Horace Grant, promise that the meeting will be the most successful in the history of the Association, and this promise is warranted by the well-known hospitality of Louisville and Kentucky doctors.

Titles of papers should be sent to the Secretary, Dr. H. W. Loeb, 3559 Olive street, St. Louis.

THE RAPID DILATION OF STRICTURES OF THE EUSTACHIAN TUBE BY ELECTROLYSIS.

BY ARTHUR B. DUEL, M.D., NEW YORK.

For a number of years past we have been taught that the electrolytic action of the negative pole of the galvanic current exerted a most powerful influence in retarding the growth of tissues, and in causing the reabsorption of hyperplastic connective tissue.

In an article on "Electricity in Medicine," read before the New York State Medical Society, 1895, Dr. William J. Morton says: "As a result of long experience I have learned, and have taught for many years, that the negative pole is emphatically the right pole, and the best treatment to apply in all cases of chronic inflammation, so-called—that is to say, in all cases where, from causes like traumatism, infectious processes, rheumatism, and so forth, a hyperplasia of connective tissue and an impaired local nutrition exist—in such cases, be the resulting chronic inflammatory process within the pelvis, within organs, in joints, nervous structure, muscles, or skin, wherever newly formed fibrous tissue may have located itself, the negative pole, and it alone, exerts what may be termed a resorptive action." From an experimental study of its value in other locations, the author was led to make use of it in the rapid dilation of strictures of the Eustachian tube, occurring in chronic tubal catarrh, and chronic catarrhal otitis media of the hyperplastic variety.

In the preliminary report published in the *New York Medical Journal*, January 16th, 1897, the method of its use was described. For the sake of completeness, I will insert here a description of the apparatus, and method of use, copied from that article.

"For the purpose of conducting the current I have had four copper bougies, varying from No. 3 to No. 6 (French scale), securely mounted on No. 5 piano wire. These are passed through small, insulated, pure silver catheters and drawn back until the bulging portion of the bougie fits tightly in the mouth of the catheter.

"(The catheters are insulated by drawing thin rubber tubing over them, or by winding with silk and afterwards coating them with shellac. Hard rubber catheters were used at first, but they are not as readily bent to fit different patients, and are not stiff enough.)

"The other end of the wire is fastened $1\frac{1}{2}$ inches from the funnel-shaped end of the catheter to the handle which connects it with the negative pole of the battery, as seen in the cut. The indifferent or

positive pole is connected with the hand of the patient by means of an ordinary contact electrode. It is absolutely essential that the battery with which the current is applied should be supplied with a perfect rheostat and milliamperemeter.

"The tube is bougied in the usual manner, the tip being pushed forward until it is felt to be obstructed by the constriction. The current is then slowly turned on, until from two to five milliamperes are used. It is never necessary to use more than this, and probably the best results are obtained by a longer contact with a small amperage than *vice versa*.



"After a contact of from two to five minutes the bougie is felt to pass on through the softened stricture with a slight pressure. In some instances the bougie encounters more than one constriction before it passes into the tympanum. The bougie is then slowly withdrawn through the constriction, and the current gradually turned off before the catheter is removed. The current should never be opened or closed suddenly."

I wish now to report the results as briefly as possible in ten cases, treated in Dr. Dench's clinic, to whose courtesy I am indebted for the opportunity of carrying on the experiments.

CASE I.—R. T., male, 19, came to N. Y. Eye and Ear Infirmary, August 5th, 1896, with following history: Family history negative. Has always enjoyed good health, with the exception of measles in childhood, until five years ago, when he had a severe attack of influenza. Ever since that time there has been impairment of hearing and tinnitus aurium on the right side, and occasional attacks of vertigo. The impairment of hearing and vertigo have grown gradually worse. Physical examination shows right membrana tympani very much retracted. Right Eustachian tube, on inflation with catheter, markedly contracted, allowing only the slightest amount of air to enter tympanum. Functional examination shows left ear to be practically normal, except for slight raising of lower tone limit.

Right ear: acoumeter, 3 feet; whisper, 6 feet. Upper tone limit, 2.0. Galton; lower tone limit, 512 V. S. Bone conduction increased. No improvement after inflation.

October 14th.—Cotton bougie, two-per-cent. solution silver nitrate, passed into tympanum. Immediate improvement in hearing—whisper, 24 feet.

October 16th.—Says improvement lasted only a few hours. Functional examination same as at first.

October 23d.—Inflation by catheter fails to give relief. Cotton bougie again passed as before.

October 25th.—Immediate relief, which lasted for a few hours only.

November 9th.—Repeated inflations have failed to give any relief. A metallic bougie, No. 4, French, attached to the negative pole as described above, was passed in for about three-quarters of an inch, when a tight constriction was encountered. The current was now turned on, a strength of three milliamperes being used. After a few minutes the bougie passed on for a short distance under moderate pressure. In this manner it was slowly pushed on through a long constriction, about fifteen minutes being consumed before the bougie passed into the tympanum. After withdrawing the bougie the relief was immediate, as it had been with the cotton bougie. There was a marked difference, however, in the length of time during which the relief was experienced.

November 12th.—Says he now hears at home the tick of an alarm clock with right ear 20 feet distant, which he was not able to hear previously more than a few inches from the ear. The tinnitus is much less apparent. No more vertigo. Examination previous to inflation: whisper, 24 feet; acoumeter, 20 feet.

November 18th.—There has been no relapse in hearing as on former occasions after cotton bougie. Tests made three times a week show same results. Still some evidence of contraction of tube, although a good volume of air enters tympanum through the catheter. Bougie No. 5, French, passed in same manner as before.

November 30th.—Tube well open. No. 6, French, passed. There has been no relapse.

December 30th.—The tube has been well open for past month. No bougie necessary. Hears whispers with right ear 25 feet. Acoumeter, 24 feet. No tinnitus aurium and no vertigo for several weeks.

CASE II.—R. S., male, 39, has never had any serious illness. For past ten years has had impairment of hearing and tinnitus in both ears, with attacks of vertigo.

Physical Examination shows both membranæ tympani retracted. Marked constriction of both Eustachian tubes.

Functional Examination.—Acoumeter, right, 3 feet; left, not at all. Whisper, right, 30 feet; left, 4 feet.

Tone limits: Upper right, 2.5. Galton; upper left, 3.3. Galton; lower right, 128 V. S.; lower left, 1024 V. S.

No improvement after inflation.

November 11th.—Right tube bougied, No. 5, French, negative pole, 2 to 4 milliamperes.

November 13th.—Left bougied in same manner.

November 16th.—Now hears acoumeter, right, 11 feet; left, 1 foot. Says the vertigo has entirely disappeared, and the tinnitus very much lessened. Both tubes admit air to the tympanum quite freely.

CASE III.—W. L., male, 27, scarlet fever two years ago, general history otherwise negative. For past year has been troubled with vertigo at all times, most marked for an hour or two after rising in the morning. Impaired hearing and tinnitus noticed on right side for five months past.

Physical Examination shows retracted membrana tympanum on right side, and marked constriction of right Eustachian tube prevents air from entering tympanum through the catheter.

Functional Examination.—Acoumeter, right, 20 feet; left, 30 feet. Whisper, right, 25 feet; left, 30 feet. Bone conduction normal.

Tone limits: Lower right, 54 V. S.; lower left, 40 V. S.; upper right, 1.4. Galton; upper left, 1.4. Galton.

November 9th.—Constriction of right tube dilated with No. 5, French bougie, two and one-half milliamperes; ten minutes' contact.

November 16th.—Hears whispers, right, 30 feet; acoumeter, 30 feet. The vertigo has entirely disappeared. Tube admits air, but still narrow. Dilated with No. 6, French, used in same manner.

November 23d.—No reappearance of vertigo. Slight tinnitus present.

December 30th.—Has not returned for five weeks, because he "felt perfectly well." No vertigo since last note. Slight tinnitus. No. 5, French, used as before; tinnitus immediately stopped.

CASE IV.—B. G., female, 54. General history negative. Six months ago caught cold in the head and suddenly began to have tinnitus and impaired hearing in right ear. The tinnitus is now constant and is apparently growing worse. Physical examination shows right membrani tampani retracted. Eustachian tube constricted.

Functional Examination.—Acoumeter, right, 1 inch; left, 30 feet; bone conduction diminished.

Tone limits: Upper right, 2.0. Galton; upper left, 2.3. Galton; lower right, 512 V. S.; lower left, 40 V. S.

Inflation for several weeks without improvement.

December 4th.—No. 5 French bougie, 3 milliamperes, 10–15 minutes' contact, passed through constriction into tympanum. Immediately after, right, whisper, 10 feet; acoumeter, 6 inches.

December 12th.—Tube admits air quite freely; tinnitus improving under inflation twice a week.

CASE V.—J. L., male, 59. Impaired hearing, left side, for six to eight years; constant loud tinnitus and dizziness. Membrana tympani retracted, left tube narrow.

November 16th.—The left tube was dilated with No. 5, French, as in previous cases.

November 20th.—Patient returns, saying his hearing is "fifty per cent. better than it has been for years." Tinnitus and dizziness very much diminished. Functional examination shows improvement of five feet in whisper and acoumeter distance on side which has been bougied.

CASE VI.—J. L., male, 42. Impairment of hearing; with constant loud tinnitus on left side for past six years. Physical examination shows left membrana tympani retracted, and left tube constricted.

Functional Examination.—Whisper, left, 20 feet; acoumeter, 2 feet; right, whisper, 30 feet; acoumeter, 30 feet.

December 21st.—Bougie No. 4, French, passed through left tube as in previous cases.

December 23d.—Acoumeter, left, 4 feet; whisper, 30 feet. The patient says he hears ordinary conversation better. Tinnitus considerably diminished.

January 4th.—The patient says his hearing for ordinary conversation is better than for years; the tinnitus is still present, though considerably diminished.

CASE VII.—E. M., female, 42, has had impaired hearing and constant loud tinnitus in right ear for past six weeks. The right membrana tympani is retracted, and the right Eustachian tube admits practically no air into tympanum on inflation.

December 21st.—A No. 5 French bougie, two milliamperes, passed slowly into tympanum.

December 23d.—The tinnitus is much diminished; marked improvement in hearing (tests not made). The tube admits air freely.

December 28th.—The tube is open; the tinnitus is very slight, and the hearing is greatly improved.

CASE VIII.—R. H., male, 28, was referred to me by Dr. J. F. McKernon, with history of deafness, tinnitus, and occasional attacks of pain for the past eleven months. Inflation had failed to give relief. Both membranæ tympani were retracted and Eustachian tubes constricted. Two attempts at passing cotton bougies had been abandoned on account of narrow constriction and great pain attending the operation.

November 18th.—A No. 5 French bougie, with a current strength of three milliamperes, was passed through both tubes. Immediate relief. Inflation two days later shows tubes to be quite patent. Two weeks later returns saying that he has not been back before because he is perfectly well. The tinnitus has entirely disappeared, and so far as he can see the hearing is again normal.

CASE IX.—M. F., female, 68, complains of deafness and tinnitus for several years, most apparent on left side.

Functional Examination.—Left, whisper, 20 feet; acoumeter, 6 feet.

December 23d.—A constriction of the left tube dilated with No. 4 French bougie, in same manner as above. Immediately after, acoumeter, 16 feet.

January 4th.—The patient returns, saying that his hearing has been much better on left side. Acoumeter, 20 feet; whisper, 26 feet.

CASE X.—C. S., female, 20. Measles in childhood, influenza five years ago, followed by impairment of hearing and tinnitus in both ears, gradually growing worse up to present time. Physical examination shows both membranæ tympani much retracted, and both tubes very much stenosed, admitting only a slight amount of air on inflation.

Functional Examination.—Acoumeter, right, 6 inches; left, 6 inches. Whisper, right, 15 feet; left, 15 feet. Bone conduction, 256 fork, diminished.

Tone limits: Upper right, 2.3. Galton; upper left, 2.3. Galton; lower right, 256 V. S.; lower left, 256 V. S.

Repeated inflations have failed to produce any improvement.

December 21st, 1896.—The right tube dilated with No. 4 French, two to three milliamperes current strength, and a contact of ten to fifteen minutes. Immediately after, acoumeter, 5 feet.

December 23d.—Acoumeter, right, before inflation, 8 feet; after

inflation, 14 feet. The left tube dilated in same manner. A very tight constriction encountered near the mouth. Acoumeter (immediately after without inflation), 14 feet.

December 28th.—The patient says there is a marked improvement in hearing for everything at home. Inflated.

December 30th.—The improvement continued until yesterday, when the hearing became dull again. Both tubes dilated with No. 5, French, three milliamperes, as before. Immediate improvement.

January 4th.—Improvement holds good. Inflated.

One has but to glance at the functional examination before and after the use of the bougie, in the cases reported above, to be convinced that in electrolysis, used in the manner indicated, we have the best method yet described for overcoming strictures of the Eustachian tube, because the dilation is more quickly and surely accomplished, and the result more permanent.

Moreover, we have in it a valuable operative procedure, easily carried out, which promises hope of relief from the vertigo, tinnitus aurium, and impairment of hearing, from which a large percentage of patients suffer in spite of all efforts to cure them.

14 West 32d street.

The Significance of Palatal Deformities in Idiots. (*Medical Record, June 5, 1897.*)

In an editorial, this journal quotes the observations made by Dr. Channing, who has given this subject much time and consideration. His conclusions are as follows:

1. Two-fifths of the palates of idiots are of fairly good shape.
2. Palates of normal individuals may be deformed.
3. In the idiot it is a difference in degree and not in kind.
4. In either case it shows irregular development anatomically.
5. Palates of average children and idiots, under eight years of age, probably do not in the majority of cases markedly differ.
6. There is no form of palate peculiar to idiocy.
7. The statement that a V-shaped, or other variety of palate, is a "stigma of degeneracy" remained to be proved.

In the opinion of Dr. Frederic Peterson, "The deformed palate is one of the chief anatomical stigmata of degeneration." Talbot, Charon and Clouston incline toward the same sentiment.

Channing's statistics, however, show that the deformed palate occurs as frequently in one type as the other.

M. D. L.

EXPERIMENTS ON THE EUSTACHIAN TUBE BY MEANS OF THE TONGUE THRUST INTO THE NASO-PHARYNX.

BY HAMILTON STILLSON, A.M., M.D., PH.D., SEATTLE, WASHINGTON.

The writer has elsewhere ("Uses of the Tongue Post-Nasally in the Treatment of Post-Nasal Catarrh") described his method of teaching patients to thrust the tongue up behind the palate in the cleansing and the medicating of the naso-pharynx in post-nasal catarrh. It is desired in this paper to indicate how the tongue so placed may demonstrate the answer to a few mooted questions relative to the Eustachian tube.

With normal conditions, any patient who can command reasonable control of the movements of the tongue and soft palate can learn to feel the pharyngeal end of the Eustachian tube with the tip of the tongue, and by careful practice he can learn to swallow while the tip of the tongue is placed against the pharyngeal orifice of the Eustachian tube. He may, therefore, train himself to observe the phenomena of the opening and closing of the tube, and the elongation and shortening of that part of the tube projecting into the fossa of Rosenmüller.

One question to settle is whether the normal Eustachian tube is open throughout its entire length. That is to say, whether the tympanic cavity openly communicates in the normal state with the naso-pharyngeal cavity. This question has long been debated. The most recent experiments on it have been conducted by Hammerschlag, who, at the first Austrian Otological Congress, held June 28th and 29th, 1896, gave a report of thirty observations upon four normal hearing individuals with the following results:—

"The membrana tympani exhibit constant movements coincident with the systole of the heart:

"The membrana tympani moved during quiet respiration in all cases during the inspiration outwardly, during the expiration inwardly. During quiet respiration through the mouth these respiratory movements are less extensive."

Hammerschlag, therefore, arrives at the following conclusion:—

"The tympanic cavity openly communicates in the normal state with the naso-pharyngeal cavity."

He explains it by saying that, "The expiratory air current draws the air along from the tube and tympanic cavity, according to the principle of the syphon, whereby the drum membrane is moved inwardly.

"The inspiratory air current then enters the tympanic cavity so much easier, since it now represents a *locus minoris resistentie*."

The instrument used by Hammerschlag was one especially devised by himself, being a modification of that of Mach.

In reply to Hammerschlag, I would say: First, that the expiratory current of air could not draw the air along from the tube and tympanic cavity, according to the principle of the syphon, because the air in the naso-pharynx is condensed in expiration. The air in all the adjacent cavities that openly communicate with the naso-pharynx is condensed in expiration.

I would say, second, that the force of the inspiratory air in the nose is not directed toward the Eustachian tubes, but towards Luschka's tonsil.

If you will moisten a piece of gauze with a weak solution of iodide of potassium, and by means of the tongue thrust it up into the naso-pharynx and carefully coapt it against the posterior wall of that cavity, and then inhale through the nostrils a nebulized solution of starch, you will discover that the most of the starch particles have collected on the gauze in the region of Luschka's tonsil. I can imagine that there is a whirlpool produced in the nasal air, in the region of Luschka's tonsil, that will go far towards indicating to us the office of that body.

I would say, in the third place, that these pulsatory and respiratory movements may be easily observed by means of an ordinary manometer. I prefer that the manometer be made with longer legs than the one Politzer used, and that the portion of the tube where the index stands should be made smaller than the rest of the tube. For instance, take a glass tube, two-thirds of a millimeter in diameter, bend it in the shape of a meat-hook, drawing out a part of the leg that is next to the ear to a diameter of one-third of a millimeter. Let the legs be one and one-half inches long. Thrust the straight end through a rubber cork, place a drop of colored alcohol in the tube as an index, and hermetically seal the rubber cork in the ear. With a mirror in front of you and a bright light behind you the slightest movement of the colored index is observable. With the manometer so placed, open the jaws wide and thrust the tongue well down, as in the act of yawning. The Eustachian tube will be felt to open, the expiratory breath will be felt in the middle ear as a warm breath, while the entering air will be felt as cold to the pharyngeal orifice of the Eustachian tube, but not to the middle ear. In other words, it will feel as though the tube were open. Observing the index in the manometer it will be seen to go extensively out in

expiration, and extensively in inspiration, indicating movements of the membrane reverse to those given by Hammerschlag.

If now the tip of the tongue be thrust into the naso-pharynx and the mouth of the Eustachian tube closed by it, and the rest of the experiment repeated, the movements observed will cease. The index will not make the excursions formerly observed so long as the tongue closes the Eustachian tube.

As a second set of experiments, place the jaws as in ordinary respiration, place the manometer as before and respire with ordinary respiration, first through the nose and then through the mouth. It will now be seen that the movements of the index are the same as those mentioned by Hammerschlag. That is to say, in inspiration the index moves outwardly, in expiration it moves inwardly. In respiration through the nose the movements of the index are somewhat more extensive than when the respiration is performed through the mouth. They are more extensive in forcible respiration than in quiet respiration.

If now the tongue be thrust into the naso-pharynx, and the pharyngeal orifice of the Eustachian tube be closed by the tongue, the movements of the index, while respiration proceeds, will continue as before—outwardly during inspiration, and inwardly during expiration. (It ought to be remarked that there is pulsation of the index synchronous with the pulsations of the heart, there being an inward pulsation during systole, and an outward pulsation during diastole.)

Manifestly then, the respiratory and pulsatory movements of the membrana tympani, observed by Hammerschlag, have nothing to do with the opening or the closing of the Eustachian tube. They will continue whether the tube is open or closed.

Second, when the tube is manifestly open the excursions of the membrana tympani are the reverse of those observed in ordinary respiration.

Third, when the tube is manifestly open, as in the act of yawning, and it is then manifestly closed by means of the tongue tip, a closure of the tube is brought about similar to that ordinarily observed. From all these experiments it would be concluded that the Eustachian tube is normally closed at some point, but since the pharyngeal orifice of the tube can be seen to be open, and can also be felt to be open by means of the tongue, the normal closure of the tube must be somewhere other than at the pharyngeal orifice.

It is not within the province of this paper to enter into a theoretical explanation as to the cause of these movements in the membrana tympani, but it seems to me the causes are traceable to blood pressure.

We know that during systole of the heart there is an increase of blood pressure in the head. We know that in the expiratory movements of respiration there is an increased blood pressure in the head. Now, if during systole, and also during expiration, the membrana tympani move inward, it is reasonable to infer that the inward movement of the drum membrane spoken of by Hammerschlag is due in some way to increased blood pressure in the head.

If it be objected that, after all, the inward movement of the manometric index in increased blood pressure of the brain is not proof that the membrana tympani moves in the experiment, I would remark that when the membrane is perforated the movements in the index will be reversed, namely, outward during systole. Moreover, in cases of ankylosis of the stapes, and in cases of sclerosis of the membrane, there are no pulsatory or respiratory movements of the index. The excursions of the index are, therefore, of diagnostic importance.

Another problem on which I would ask your experimentation is whether the pharyngeal orifice of the Eustachian tube is closed during the act of swallowing. This is such a practical question, and one whose answer will affect so materially the treatment of diseases of the tube, that the writer would wish his conclusions to be verified. The concensus of opinion is that the tube is opened during the act of deglutition. Gruber says (*Diseases of the Ear*, page 68): "No one to-day seriously doubts that the tuba Eustachii is, under normal circumstances, opened during deglutition * * * *." Also (page 183), (This) "appears distinctly from the fact that air can be introduced through the catheter more easily during the act; less force being required to compress the air-bulb, and the auscultation sound at the same time, being more distinct and louder."

Now, we have shown that when in a quiescent state the tube is open at its pharyngeal orifice, and closed, likely, at its isthmus. If, then, a catheter be inserted into the pharyngeal orifice, and air be forced through the catheter, will the isthmus be more readily blown open at a time when the pharyngeal orifice is more widely opened or more tightly closed? Would not the isthmus feel the impact of the in-rushing air better if the pharyngeal orifice should be closed around the catheter than if the pharyngeal orifice were pulled more widely open?

If you will insert a catheter into your Eustachian tube and then thrust your tongue behind your velum palati, and feel the behavior of the tube, you will learn that in the act of swallowing, the pharyngeal portion of the tube is drawn up and pushed up and tightly coapted around the catheter. This coaptation of the pharyngeal portion of

the tube to the catheter is accomplished mainly, as you will learn, by the constrictor muscle. You will remember that the superior constrictor muscle encircles the Eustachian tube in its fibers, and that the anterior insertion of its fibers is in the velum palati. You will remember also that the anterior and inferior wall of the Eustachian tube is membranous, the anterior wall being attached to the pterygoid plate. When, therefore, the constrictor fibers contract, the soft palate is drawn up against the Eustachian tube coapting its membranous wall against its cartilaginous wall, the constrictor fibers acting as a draw-string. If the catheter is inserted into the pharyngeal orifice of the tube and the draw-string closes around the catheter and the dorsum of the tongue assists in condensing the tissues around the catheter, the air blown through the catheter then is caught and held in the Eustachian tube and easily condensed sufficiently to blow the isthmus open. I am inclined to believe also that since the abductor tubæ muscle arises from the cartilaginous portion of the tube near the isthmus and is inserted into the velum palati, it assists not only in closing the pharyngeal orifice, but in opening the isthmus at the same time.

Of course, in Politzerization, the air is more readily forced into the Eustachian tube during the act of swallowing for reasons similar to those that are given in explanation for the Valsalvian experiment, namely: when the velum palati is coapted against the back wall of the pharynx the air in the nose is more easily condensed, a point of condensation soon being reached that is sufficiently great to blow the tube open from one end to the other. But even in Politzerization the closing of the tube by the act of swallowing may be observed if the conditions are such as are required by the necessities of the experiment. Instead of using high pressure in Politzerization, let us use only sufficient pressure lightly to open the Eustachian tube, and then swallow. You will feel the tube close. That is to say, let all the air from your air-tank escape but two or three pounds. Insert a Politzerizing nozzle into one nostril and close the other and turn on the air, and with the dorsum of the tongue close the naso-pharyngeal exit. You will feel the air lightly enter the tympanum. Now swallow, and during the second stage of the act you will feel that the Politzerization ceased during that stage of the act.

Gruber attempts to substantiate his position also by referring to a case reported by Nicoladoni (*Monatsschrift fuer Ohrenheilkunde*, 1875, No. 8). Nicoladoni saw, in a case which was operated upon, a hæmatoma at the orifice of the Eustachian tube sink deeper into the tube during each act of swallowing and return again to its previous

position after the act was over. Gruber thinks this speaks irrefutably for the opening of the tube during the act of swallowing. A reference to the literature of Nicoladoni's case will reveal the fact that the hæmatoma was inside the orifice of the tube. Now, if the orifice of the tube were more widely opened in deglutition, would not the tumor be more apt to gravitate further down and out of the tube? The reverse occurred. It must, therefore, have been forced up into the tube further during deglutition.

If you will thrust your tongue into the naso-pharynx you will observe that at the beginning of the second stage of the act of swallowing, the dorsum of the tongue pushes the soft palate upwards and backwards, and that the superior constrictor muscles, together with the tensor palati and palato-tubal muscles, squeezes the pharyngeal end of the Eustachian tube, constricting it into the fossa of Rosenmüller, and that the belly of the palato-tubal muscle acts somewhat on the plan of a piston, first bunching up before the orifice of the tube and then drawing up against the tube at its membranous portion, pushing anything up further into the tube which may lie in the orifice of the tube; so that Nicoladoni's case, instead of indicating the opening of the tube during deglutition, would manifestly indicate the reverse.

(Dr. Stillson here took occasion to refer to Dr. Loeb's case of the lady whose nose had been removed for the removal of an epithelioma, and whose naso-pharyngeal cavity could be viewed through the nasal meati, and called the attention of the physicians examining her to the fact that the velum palati was pulled up against the pharyngeal orifices of the Eustachian tubes when the woman swallowed and when she coughed.)

Politzer (Diseases of the Ear, page 71) attempts to prove by manometric observations that the Eustachian tube is opened during deglutition. He inserts a small manometer, with a colored fluid index, hermetically into the external meatus. He says: "During theValsalvian experiment the fluid was seen to rise (in the manometer). If the act of swallowing were performed with a closed mouth and nose, during the first stage of this act a slight rise (positive pulsation) of the fluid in the manometer took place, followed, however, during the second stage, by a considerable fall (negative fluctuation), as the air in the tympanic cavity is rarified and the tympanic membrane is pressed inward. The fluid will now remain in the place where it fell to after the act of swallowing and will return to its former place only when the closed Eustachian tube is reopened by another act of swallowing with open nostrils."

In reply to this statement made by Politzer, we would say, first, that fluctuations of the index in the manometer can be produced in various ways. Under proper conditions pulsations may be observed in quiet respiration, in active pulsations of the heart, in forcible suspension of respiration, in opening and closing of the mouth, in contraction and relaxation of the masseter muscle, in forcible upward and downward movements of the dorsum of the tongue, in forcible backward and forward pushing of the velum palati, etc., etc. So that to make the experiment exact, and to make it conclusive as an experiment on the Eustachian tube we must be careful to eliminate all forces causing positive or negative fluctuation in the manometric fluid, except those directly concerned in the opening and the closing of the Eustachian tubes. Let us, then, hermetically seal the manometer into the external auditory meatus, take a swallow of water into the mouth, closing the jaws gently, force the dorsum of the tongue up against the soft palate until the soft palate is against the posterior wall of the pharynx, and then let the fluid in the manometer come to rest, still gently refrain from respiration, close the nostrils gently with the thumb and forefinger and swallow. There will be, as Politzer says, first, positive or outward fluctuation of the manometric index, followed by increased negative or inward movement of the index. The initiatory positive fluctuation is wholly ignored by Professor Politzer for some unknown reason, yet if the Eustachian tube were simply opened in the initiatory act of swallowing, this outward positive fluctuation could not occur, for, with the soft palate in the position I mention, there could be no initial condensation of the air in the nose.

With the velum palati as elevated as possible, and with the nostrils closed, there would be downward movement of the velum palati, resulting simply in rarefying the air in the nose and tympanum alike. This can be demonstrated. Let another manometer be inserted into one of the nostrils, letting the velum palati be pushed up by the dorsum of the tongue as far as it can go; let the other nostril then be closed, and the fluids in both manometers be permitted to come to rest; an act of swallowing will then produce initial positive fluctuation in the ear manometer, but not in the nose manometer. There must, therefore, be some initiatory condensation of the air in the tympanum that does not occur in the nose when the nostrils are closed. What is it, and what is its cause?

If you will close your nostrils as before and thrust your tongue gently over the pharyngeal orifice of the Eustachian tube and swal-

low, you will observe what this initiatory condition of the air in the tympanum is, for you will feel by means of your tongue tip a few bubbles of air escaping from the orifice of the Eustachian tube just before you see the positive fluctuation in the ear manometer. The air, then, is condensed in the Eustachian tube before the air in the tympanum is rarefied in the act of swallowing, and this initiatory condensation of the air in the tube is caused, not by the condensation of the air in the nose, but by a closure of the pharyngeal orifice and a lessening of the caliber of the tube itself. And if it be argued that after all the air is finally rarefied in the tympanum at the close of the Valsalvian experiment, I want to remind you that before that stage in the act of swallowing, which is concerned with the Eustachian tube, is really begun, the soft palate is pushed high into the nasopharynx, but that at the close of the act of swallowing, the velum palati falls quite an appreciable distance before communication with the air in the lungs is re-established. With the nostrils closed the velum palati and the tongue would greatly rarefy the air in the nose. When the velum palati and the tongue had descended a sufficient distance the pharyngeal orifice of the Eustachian tube would be pulled open again and a point of rarefaction of the nasal air would at the same time be reached of sufficient degree easily to cause rarefaction of the air in the tympanum. This final rarefaction in the tympanum in the Valsalvian experiment proves nothing as to the opening or closing of the tube. In ordinary deglutition it does not occur.

We come now to the tuning-fork tests. Politzer says (*Diseases of the Ear*, page 70): "The Eustachian tube is opened wide during the act of swallowing * * * *. This can be proved * * * *. If a vibrating tuning-fork is held in front of the nostrils, a uniformly weak sound can be heard in both ears; during the act of swallowing, however, the tone of the tuning-fork will be perceived in both ears greatly increased."

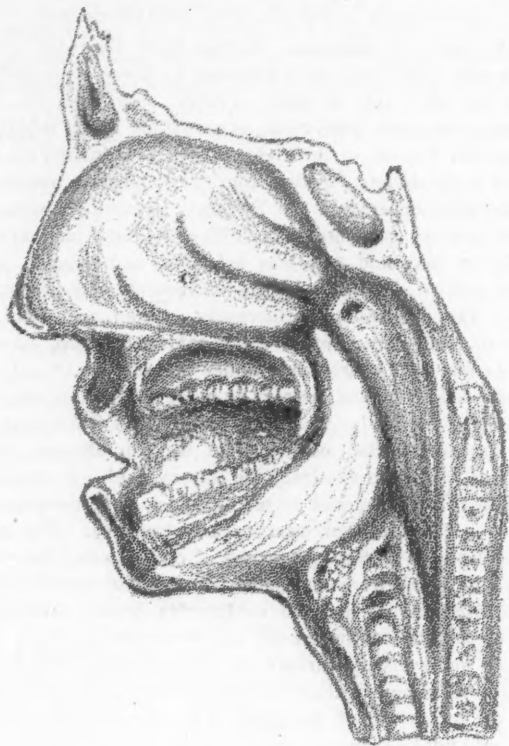
Politzer thinks this to be proof positive that the vibrations of the tuning-fork penetrate unchecked into the tympanic cavity through the open Eustachian tube. But by means of the tongue pressed against the pharyngeal orifice of the Eustachian tube we can demonstrate that the ears hear the tuning-fork better in deglutition, not because the tubes are then opened, but because the tubes are then closed. Hold the vibrating tuning-fork in front of the nostrils, thrust the tongue well into the naso-pharynx until it closes both Eustachian tubes and the passage from the pharynx into the naso-pharynx, the sound of the tuning-fork will then be perceived in both ears, greatly

increased. The reason for this is easily demonstrable. If I close both nostrils and hold the vibrating tuning-fork in front of my open mouth, and then thrust the dorsum of the tongue up against the soft palate, closing all connection with the naso-pharynx, I will hear the sound of the tuning-fork increased, and can increase or decrease the volume of the tone by closing or opening the communication between the mouth and pharynx. Indeed, if I close the nose and the ears and the mouth, and hold a hollow vessel, as a glass tumbler, a foot or so in front of my face, and place a vibrating tuning-fork, alternately, in front and to the side of the tumbler without increasing or decreasing the distance of either object from the ears, just as the fork gets in front of the mouth of the tumbler I will hear the sound of the tuning-fork, greatly increased; or, to make the experiment conform more closely to the requirements, let me take a large, short tube, as a gas-lamp chimney, and place a vibrating tuning-fork in front of one end of the tube, and while the fork is sounding, let me, alternately, close and open the other end of the chimney with my hand. When the end is closed by my hand I will hear the sound of the fork, greatly increased. Evidently when I close the end of that chimney I convert the chimney into a reverberating cavity, whose walls catch and intensify the sound without reference to the Eustachian tubes.

As a further experiment, let us close both nostrils and the mouth and listen to the vibrating tuning-fork. If we will eliminate the clicking and crackling sounds made by the soft parts of the nose and throat, we will discover that during the act of swallowing we hear the sound of the tuning-fork increased. If, while the tuning-fork is sounding, we will thrust our tongue into the naso-pharynx and press firmly against the Eustachian tubes, we will discover the fact that the ear hears better when the Eustachian tube is closed.

To sum up, then, we may, by means of the tongue thrust into the naso-pharynx, feel the pharyngeal orifice of the Eustachian tubes normally open; we may feel bubbles of air escaping from the tube in the act of swallowing, proving condensation of the air in the tube; we may feel that in the middle of the act of swallowing, the belly of the palato-tubal muscle is drawn up against the mouth of the tube; we may feel that muscle, together with the muscles of the tongue, palate and pharynx, closing the pharyngeal orifice of the tube, pressing it into the fossa of Rosenmüller; we may feel that in the latter portion of the act of swallowing, the palato-tubal muscle relaxes and the restoration of the other muscles to their former state, restoring the normal patency of the pharyngeal orifice of the tube.

(The accompanying cut represents the tongue thrust into the nasopharynx. The cut is in error, however, as it represents the pharyngeal orifice of the Eustachian tube too high up.)



CLINICAL REPORTS.

SOME NOTES ON A CASE OF ERYSIPELAS INVOLVING THE FRONTAL SINUS, ORBIT AND MENINGES.

BY NORTON L. WILSON, M.D., ELIZABETH, N. J.

Mr. W., aged 33, salesman. Robust until Thursday, July 25th, when he was taken with chill followed by fever, pain, redness and swelling on right side of nose. Friday, July 26th, Dr. W. was called to see the case, and upon examination found what he supposed was an abscess in the right nostril. He incised the swelling but failed to obtain pus. Patient continued under his treatment until July 30th, when he entered the Elizabeth General Hospital. Upon admission patient presented the following signs and symptoms: Right side of nose and face was red, tense and boggy. The eye-ball was pushed forward and its movements almost entirely destroyed. The eye-lids were markedly swollen and chemosis was very great. The temperature was $103\frac{3}{8}$, pulse 120, occasionally slight delirium. The case came under the care of Dr. M., who at once diagnosed an orbital abscess; he made an incision into the orbit through the upper lid, but found no pus. Upon inspecting the nostril he discovered what he supposed was an abscess, plunged a bistoury into it without obtaining the creamy fluid. In the afternoon of the same day I was asked to see the case. The temperature was still $103\frac{3}{8}$, pulse 120, but weaker than formerly. The man was restless and presented the appearance of one suffering from cerebral irritation. The lids were enormously swollen and the eye-ball fixed; it was pushed forward and the conjunctiva greatly swollen. The pupils were slightly contracted and did not respond to light.

The case had every appearance of an erysipelatous cellulitis of the orbit with involvement of the meninges. Owing to the swelling of the lids and the contraction of the pupil, a satisfactory ophthalmoscopic picture could not be obtained. The cornea began to lose its lustre, and fearing the intense pressure would cause a slough, I slit the lids at the outer angle, thus relieving the pressure. Iced cloths were then applied, and the next morning the swelling was not so great, but the patient had become comatose, and the temperature had risen to $105\frac{1}{8}$. The temperature was reduced to $95\frac{1}{8}$ by an ice-water enema—a drop of ten degrees. I could scarcely credit this, but my house physician assures me this is correct. I have seen the temperature in typhoid fever brought down several degrees by the use of cold water enematic.

The patient died on the afternoon of July 31st.

The autopsy showed a purulent Lepto meningitis of the convexity of the posterior lobes. The cellular tissue in the orbit was œdematous, but no pus was found. The mucous membrane of the frontal sinus was swollen and a small amount of pus was present. Unfortunately I was unable to have cultures made, but I think there is no doubt but that the streptococcus erysipelatosus entered the right nostril, invaded the frontal sinus, thence the orbit, as there is a direct opening from the sinus into the orbit in not a few skulls, and so on to the brain.

REPORT OF A CASE OF CHANCRE OF THE TONSIL.

BY HAL FOSTER, A.B., M.D.,

Laryngologist to St. Margaret's Hospital, Kansas City, Mo.

On December 22, 1896, Mr. M., a stout, well-developed young man of 24, was referred to me by Dr. George Hamel of this city. This young man was employed in a grain office in the Exchange Building. He belonged to a good family in Kansas. Thanksgiving day a number of young men came to the city to visit and dine with him. He took his friends out to see the College foot-ball game in the afternoon. On the way to the grounds they took several drinks. During the evening he seemed to think that something else must be done for their enjoyment. This thought uppermost in his mind they visited a house of unsavory reputation. A wine supper was ordered immediately; this young man, being unaccustomed to strong drink, was soon badly intoxicated. The girls of this institution kissed him in the mouth. He was soon sleeping, knowing absolutely nothing until the next morning. About ten days later he called on Dr. Hamel and requested the doctor to give him a gargle, saying that he had taken cold. This treatment did not relieve the patient. December 22 he was referred to me. After a careful examination I diagnosed chancre of the tonsil. He at first was inclined to doubt the diagnosis, until the chest, limbs and abdomen were found to be covered by characteristic syphilides. The hair was also falling out. After seeing these he gave the history as related above. He was at once placed on large doses of iodide of potash three times daily. Mercury by injection was used for ten days. In a few days the hair ceased falling out. Dr. George Hamel assisted in the treatment of this young man. He made rapid improvement.

The condition was explained to him; he was informed not to marry until he was well. He was also told not to kiss any one until he had recovered. It is interesting to note the source of contagion (kissing) in this case. The virus of syphilis finds a splendid ground to take seed in the tonsillar crypts. The local treatment used was antiseptic applications. The constitutional treatment of iodide of potash was advised for one year daily.

**A CASE OF MASTOIDITIS COMPLICATING PURULENT OTITIS
MEDIA CURED BY ENLARGING THE DRUM PER-
FORATION AND SYRINGING THE
TYMPANIC CAVITY.***

BY W. SCHEPPEGRELL, A.M., M.D.,

Vice-President of the American Laryngological, Rhinological and Otological Society, Etc.,
New Orleans, La.

In March 14, 1895, Dr. McLawrence, of Monroe, La., called at my office and requested my advice in a case of acute mastoiditis. The history of the case was as follows: The patient, a railroad officer, 40 years of age, affected with rhinitis atrophica, had developed an acute purulent otitis media about two months ago. This case had progressed favorably under treatment; the discharge had almost disappeared and the perforation of the drum had become reduced to a small orifice. A week before the patient was called to my attention, however, he had been overtaken by a rainstorm, which immediately aggravated all the symptoms of the case. The discharge became more abundant and more purulent in character, and the temperature reached 103 degrees. An inflammatory swelling of the mastoid now developed, and to such an extent that it projected the auricle forward, which now assumed the appearance characteristic of aggravated cases of mastoiditis. The patient was depressed, dull and listless.

When I examined the case, I found the ear and the adjoining region in the condition already described. The mastoid was swollen, inflamed and painful on pressure; the temperature was 101 degrees, but had been much higher during the day.

This case presented all the usual symptoms demanding an immediate operation, and it was then decided that if the symptoms did not show marked improvement within twenty-four hours, the opening of the mastoid cells and the antrum would at once be undertaken. In order to give the patient the benefit of free drainage and disinfection of the tympanic cavity, I then made a V-shaped incision in the anterior posterior part of the drum, using the small perforation as the apex of the angle. A small tympanic canula was then passed through the orifice and the cavity gently but thoroughly syringed with a 10 per cent. solution of peroxide of hydrogen, this procedure being repeated the same evening. The following day the appear-

*Read by title at the meeting of the Western O. O. L. & R. Ass'n, April, 1897, in St. Louis, Mo.

ance of the patient had improved in a marked manner; the depression and dullness had disappeared, the temperature was 99.3 degrees, and the mastoid process, although still swollen, was not so painful to the touch. Under this treatment the condition of the patient rapidly improved, and five days later the case was again placed in Dr. McLawrence's hands, who afterwards reported to me the full recovery of the patient.

This case is reported not only on account of its clinical history, but also as demonstrating the fact that conservative methods may sometimes enable us to avoid more dangerous procedures in cases in which the indications are very pronounced. This conservatism, however, should not be carried to an extreme, and the case should be carefully watched so that prompt steps may at once be taken to more radical methods.

- I will also give you a short clinical history of another case in which an operation on the mastoid was avoided, and the patient made a full recovery. This case, a patient of 47 years, was referred to me by Dr. John B. Elliott, of New Orleans. It was at first a case of purulent otitis media, the result of grippe, which afterwards developed inflammation of the mastoid cells. In this case there was light inflammatory swelling of the mastoid region, but not very pronounced. The post-auricular region was very tender to pressure, and the pain in the mastoid region was of such an excruciating character that it could be quieted only by means of large doses of morphine.

The indications in this case for opening the mastoid cells was the agonizing character of the pain which persisted for weeks. The patient, however, had suffered for several years from an affection of the heart, so that chloroform or other narcosis could be given only as an extreme resort. An expective treatment was, therefore, followed out by thorough disinfection of the tympanic cavities, counter-irritants, etc. The paroxysms of pain continued daily, and could be quieted only by opiates, and did not disappear for over two months. They then subsided and the patient has made a full recovery.

From the study of the clinical history of this case, I do not recommend that, on account of the ultimate result in this case, a similar treatment be advocated in other cases, unless the contra-indications to a radical operation are as pronounced. The thorough drainage of the antrum and cells in this case would have given prompt relief, and would have avoided the depressing effects of pain continuing for such a long period of time, and also the effects of narcotics, which the relief of the pain necessitated.

NEW INSTRUMENTS.

A MODIFICATION OF THORNER'S MASTOID RETRACTOR.*

BY E. C. ELLETT, M.D.

Ophthalmic and Aural Surgeon to St. Joseph's Hospital; Ophthalmic and Aural Surgeon to the Children's Home, Memphis, Tenn.

Quite recently I was called on to do a mastoid operation, without having a suitable retractor at hand. In trying to think of some means to devise one extemporaneously, it occurred to me to model a pair from wire, something after the pattern suggested by Thorner (*Annals of Ophthalmology and Otology*, October, 1895; and *THE LARYNGOSCOPE*, October, 1896). I found No. 13 copper wire well suited to the purpose, being sufficiently pliable to be twisted into the desired shape and sufficiently firm to hold its new shape under ordinary circumstances.

The result of my efforts with this wire and a pair of pliers is shown in the accompanying figure. The general plan is that followed by Thorner, and the method of using these retractors the same as that



given for the use of his. That is, with one retractor caught in each lip of the wound the disengaged ends are held by the loops of a bandage or rubber ring which passes around the head.

These retractors possess all the advantages of Thorner's instruments, with the added beauty of cheapness and the possibility of their being made by the surgeon in a few moments to suit his particular case.

In the size I had made up, the long shaft is 32 m.m. in length, the short arms being 12 m.m. and the width 16 m.m. The wire is 2.5 m.m. in diameter. These dimensions can be varied according to the needs of any particular case, and, as Dr. Thorner suggests, the instruments may be used, when so modified, in many operations on the head, neck and extremities, as ligation of arteries, etc.

The size, whose dimensions I have given, were made up for me by Dutro & Hewitt, of this city. They are neatly finished and nickle-plated, and answer very well the purpose for which I intend them.

*Read before the Medical Society of the State of Tennessee, April, 1897.

CORRESPONDENCE.

A CASE OF PYORRHOEA ALVEOLARIS FOLLOWING OPERATION UPON THE NASAL SEPTUM.

To the Editors of THE LARYNGOSCOPE:

DEAR SIRs—In the May number of *THE LARYNGOSCOPE* I was interested in reading an article on "The Relation of the Teeth to the Ear, Nose and Antrum," by Dr. O. F. Gambati.

The importance of this relationship was impressed upon me this past winter by the following case, which, on account of its rarity, will, I trust, warrant the liberty I take in reporting it:

Mr. N., aged 40 years, applied for treatment December 10, 1896, for the relief of a long-standing catarrh and nasal obstruction. Examination of the nose revealed a large spur on the right side of the septum, posteriorally, constituting a true exostosis. On the left side was found another spur, corresponding almost exactly to the one on the right side, except that it was longer in its antero-posterior diameter, involving a part of the cartilaginous septum.

In both cases these spurs were situated sufficiently above the level of the floor to make their removal with the saw comparatively easy.

I emphasize the point of their position in relation to the floor of the nose to show that there was no possibility of injuring this region during the operations.

I first removed the spur on the right side. Following the operation there was no reaction, except a rather severe neuralgia, affecting the teeth of the upper jaw, which disappeared from all the teeth by the second day, except from the first upper right incisor, at which time the patient noticed also that this tooth was loose.

I referred him to his dentist, who wrote me that he found nothing abnormal and could not account for the pain and looseness, unless it was dependent upon the operation. The pain continued until the fourth day following the operation, when, on examining the mouth, I noticed a swelling and redness at the base of this tooth, posteriorally, and on incision found a considerable amount of pus. After this the pain ceased, and in a few days the tooth was perfectly firm.

One month later I removed the spur from the left side. The same neuralgic pain followed the operation, becoming centralized in the first *left* upper incisor. Practically the same clinical history repeated itself—the loosening of the tooth and formation of pus, the

evacuation of which stopped all symptoms—and five months after the operation the teeth appear perfectly normal.

The condition of the *Pyorrhœa Alveolaris* is usually due to the accumulation of tartar, resulting from neglect of the teeth. Sometimes it occurs after the death of the nerves, or its removal by the dentist. In either case it is usually a chronic condition.

In my patient, however, these conditions did not exist, and, moreover—the sudden appearance following directly upon the septal operation—the involvement of the incisor on the same side of the median line corresponding to the side of the septum on which the spur was located and from which it was removed, make it self-evident that the condition was dependent upon the nasal operation, perhaps by the injury of the naso-palatine nerve as it crosses the septum on its way to the Ant. Palatine Foramen.

That a neuralgia affecting the teeth should follow this operation is not surprising or uncommon, but the complication of a true *pyorrhœa* is not so easy of explanation, and I have been unable to find any mention of such a condition following this operation.

F. A. BOTTOME, M.D.,

218 Lenox ave., New York City.

June 10, 1887.

Pyæmia and Sinus Thrombosis. Dr. Leutert (Halle). *Archives of Otolaryngology*, April, 1897.

The conclusions arrived at by the author are: 1. That pyæmia without sinus thrombosis has not as yet been shown to exist, and can be excluded in making the diagnosis. 2. The diversity of metastasis following sinus thrombosis in acute and chronic otitic suppurations is explained by the various kinds of thrombi. 3. In every case of empyema of the mastoid following an acute otorrhœa and where the temperature is 39° C or over, notwithstanding free drainage from the tympanium, we should operate and expose the sinus. 4. In acute cases, if the fever has not fallen on the third day or after a fall of temperature, high fever again sets in with or without chills, the sinus should be freely opened. 5. If the case is acute and high fever has existed for several days, or, in a chronic case, if high fever appears for a number of days, even if the mastoid involvement is not marked, the sinus should be opened at the first operation, meningitis must be excluded by lumbar puncture. 6. High temperature in small children has not the same diagnostic significance, but the possibility of a sinus thrombosis must be kept in mind. 7. Isolated thrombi at the jugular are usually caused indirectly by bacteria which have passed through the diseased sinus wall. M. D. L.

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EDITORIAL.

OUR ANNIVERSARY.

With the publication of the June issue of THE LARYNGOSCOPE we have completed the first year of our existence in the journalistic world.

We can find no more appropriate occasion than now, as we stand on a firm rung of the ladder of success, of extending our thanks and gratitude to the many friends, who, by their cordial co-operation, have helped us to make THE LARYNGOSCOPE a creditable institution.

In presenting THE LARYNGOSCOPE to the profession, no effort has been spared to issue every number in accordance with the highest standard of medical journalism.

We have succeeded beyond expectations, both in the quantity and quality of the contributions of the many prominent specialists whose pen has been wielded in our interests.

The rapid increase of our subscription lists is positive proof of the popularity which THE LARYNGOSCOPE has won.

With a *bona fide* subscription list of fifteen hundred names, in-

cluding nearly every prominent nose, throat and ear specialist in America, one appreciates the necessity for such a publication as *THE LARYNGOSCOPE*.

The endorsement of *THE LARYNGOSCOPE* by three of the prominent Rhinological, Laryngological and Otological organizations speaks volumes.

We earnestly hope that our efforts to give the medical profession a strictly high class, interesting and original, special periodical will meet with continued success.

We wish to make *THE LARYNGOSCOPE* absolutely indispensable to you, and ask your renewed co-operation and support.

THE EDITORS.

THE SECTION OF LARYNGOLOGY, RHINOLOGY AND OTOL- OGY OF THE SEMI-CENTENNIAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The recent meeting of the American Medical Association, at Philadelphia, was a brilliant success from a social as well as from a scientific standpoint. The crowded assembly of physicians, who thronged the Academy of Music, gave strong evidence of the strength of the Association. The social functions to which the members were invited were so numerous that it was physically impossible to attend them all.

A special courtesy was shown the Association by the visit of the President of the United States, the Hon. William McKinley, and of the Hon. Daniel H. Hastings, Governor of Pennsylvania. Their addresses were listened to with much attention and greeted with enthusiastic applause.

The Section of Laryngology, Rhinology and Otology was well represented; in fact there was such an *embarras de richesse* that it was a credit to the Chairman, Dr. W. E. Casselberry, that the extensive program was completed in the allotted time; but it was only done by limiting the length of the discussions to five minutes and the papers to fifteen minutes. A large amount of interesting material was discussed before the Section, and some new points developed.

An interesting feature of the meeting of this Section was the presence of a number of the older representatives of this specialty—of men identified with the earlier developments of oto-laryngology—such as Drs. J. Solis-Cohen, Chas. Sajous, Lawrence Turnbull, Hermann Knapp, C. H. Burnett, and others.

It is to be hoped that the next meeting, which will be at Denver, Colo., will not fall below the standard set by this meeting.

SCHEPPEGRELL.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated meeting, held on Wednesday evening, May 26, 1897.
Joseph W. Gleitsmann, M.D., Chairman; T. Passmore Berens, M.D., Secretary.

A Case of Tubercular Inflammation of the Larynx. Reported by
Dr. R. P. Lincoln:

The patient was a woman, 61 years of age; a Quakeress. Five or six years ago she had a pleurisy on the right side, of which there is no evidence at present, excepting a slight contraction of the corresponding side of the chest. Seven months ago she had an attack of gripe, which was followed by hoarseness, without cough. The hoarseness persisted, and it was on this account that she consulted Dr. Lincoln. An examination showed that the left vocal cord and the left side of the larynx, for a short distance beyond the cord, was covered with a mass of inflammatory tissue, the nature of which he was unable to make out. There was no swelling of the larynx, no soreness, no cough—in fact, no symptom was complained of excepting the hoarseness. There was no change in the appearances of the arytenoid cartilages, and the disease did not extend much beyond the vocal cords. On the corresponding side of the neck there were two or three slightly enlarged lymphatic glands. Repeated examinations of the secretions from the larynx gave negative results.

The inflammatory mass was removed by means of Krause's Curettes and sent to Dr. T. M. Prudden, who reported that the case was one of tubercular inflammation. The tubercle bacilli were present in moderate numbers, and in the central portion of the mass was a small area of cheesy degeneration.

Microscopical Report. By Dr. T. Mitchell Prudden, of Specimen from Dr. Lincoln's Case.

The fragments of tissue sent were all imbedded, even the smallest, and a series of sections was made from each, so that all portions of the specimens were examined.

There is a new formation of tissue in part diffuse, and infiltrating the normal tissues about, in large part in the form of small miliary-nodules. This new tissue is made up of small spheroidal cells, and

larger polyhedral cells, with a scanty but distinct stroma between them. There are numerous giant cells scattered among the others, and in many parts, notably in the central portions of the new-formed nodules, there is a moderate amount of cheesy degeneration. New-formed blood vessels are few.

The original tissue of the region, consisting in part of mucous membrane, in part of deeper tissue, is normal, save for a moderate inflammatory small-celled infiltration.

The *Anatomical Diagnosis* is accordingly *Tuberculous Inflammation*.

For the purpose of controlling this diagnosis, a series of the sections were stained for *Tubercle Bacilli* which *Were Found To Be Present In Moderate Numbers*.

The examination did not reveal any structural evidence of carcinoma or other tumor growth.

Dr. Emil Mayer said: "From the history presented by Dr. Lincoln, I would say that the diagnosis would seem to be that of primary lupus of the larynx. This is borne out by the fact that there are evidences of tubercular tissue as well as a few bacilli. If it is lupus it is a very unusual and interesting case, for primary lupus almost always attacks the epiglottis.

"As regards prognosis, I may say that it is good as far as life is concerned, one case being under my observation for sixteen years and only now developing tuberculosis."

Dr. F. H. Bosworth said, he would like to ask the previous speaker whether he found any recorded cases where lupus had been shown to have become transformed into tuberculosis, or to have been a direct cause of death. He knew of none.

Dr. Mayer, in reply to Dr. Bosworth, said, that in the German literature, notably in the reports of Langie, Kafeman and Rubinstein, cases of lupus are mentioned which eventually developed tuberculosis. In one case (Rubenstein) there was a tubercular meningitis, and in his own case of lupus of the larynx there are now well-marked symptoms of pulmonary tuberculosis.

The Chairman, Dr. Gleitsmann, said, that tuberculosis sometimes develops some very unusual features in the larynx. At the meeting of the Section two months ago, and again last month, he presented a woman with a prolapse of the ventricle, which he removed. At that time he regarded the case as one of simple hypertrophy, although some of the members who saw it ventured the opinion that it would prove to be tubercular. The woman's chest had been repeatedly examined with negative results, and her temperature never rose above

99 F. In order to satisfy himself, however, regarding the true nature of the lesion, he gave the woman an injection of Koch's tuberculin, which caused a rise in temperature to 101.5, where it remained for a few days. There was also some pain in the region of the larynx and radiating towards the ear on the corresponding side. The sputum was not examined, as the patient had had no cough nor expectoration. An examination of the larynx, made a few days ago, revealed slight swelling of the wall of the ventricle.

A Case of Pemphigus of the Larynx. Reported by Dr. F. H. Bosworth.

The patient was a man, 68 years old, who for the past three years had suffered from patches in the mouth, pharynx and larynx, which were regarded as pemphigus lesions, that diagnosis having been made on the ground that he had cutaneous pemphigus. An examination of the larynx showed a number of lesions consisting, apparently, of a white fibrinous exudate, which, when peeled off, left the mucous membrane underneath practically intact. The gross appearance of the lesions was similar to that of a chronic fibrinous inflammation. Dr. Bosworth said he had never before seen a case of pemphigus of the upper air passages, and this case had puzzled him a good deal, as the lesion did not seem to make its appearance in the form of a bleb, but seems rather of an inflammatory character.

Dr. J. E. Newcomb said, that a case of pemphigus of the upper air passages had been presented to the Section a few months ago by Dr. Miller, of Brooklyn. The lesions involved the pharynx, epiglottis and larynx. The diagnosis, which was at first doubtful, was afterwards confirmed by the appearance of a cutaneous pemphigus.

Dr. Gleitsmann said, that several cases of pemphigus of the upper air passages had been reported by Loeri. A very interesting case of this character has also been reported by Dr. H. G. Klotz, of this city, in the *Journal of American Medical Sciences*, of Philadelphia. In that case, which was first seen by Dr. Gleitsmann, there were lesions in the mouth, which, when punctured, exuded a serous liquid and were quite painful. Similar lesions also appeared in the larynx. The case was referred to Drs. Fox and Klotz, who pronounced it one of pemphigus. Although there was no suspicion of syphilis, the man was put on specific remedies for a time without any resulting benefit. He gradually failed and ultimately died of collapse. The post-mortem showed pemphigus vesicles in the intestinal tract.

Dr. Bosworth said in his case there were no vesicles, and no subjective symptoms.

Papilloma of the Larynx.

Dr. Walter F. Chappell said, that about a year ago Dr. Delavan called the attention of the Section to the beneficial effect of applying absolute alcohol to papilloma of the larynx. The speaker said that about that time he saw a child, three years old, the upper portion of whose larynx was filled with papillomatous growths. Several of these were removed through the mouth, but as it was found impossible to give complete relief by this method, tracheotomy was performed and a tube put in. The child's mother, who was a very intelligent woman, was then furnished with a curved hard rubber dropper and instructed how to introduce alcohol into the larynx. The applications were continued faithfully, and during the past three months a number of the papillomata have been discharged through the tracheal tube. At the present time the child's larynx is almost entirely free from the growths.

Dr. W. K. Simpson said, it is not unusual to see papillomatous growths in the larynx disappear after the performance of tracheotomy, on account of the rest given to the larynx by the tracheal tube. The speaker said he was rather skeptical about the effect of alcohol on these growths, and also of the ability of an individual to apply it through a syringe or spray. He has tried the treatment in a number of cases without much success.

Dr. Chappell said, that in two other cases of recurrent papilloma of the larynx coming under his observation, wherein he had simply performed tracheotomy, the patients got well after wearing the tube for a year; during that time pieces of the growths were occasionally discharged through the tube, but they were not nearly such large pieces as in the case where the alcohol was applied.

Dr. Adolph Rupp said, that in one case of papilloma of the larynx recently coming under his observation, he used an alcohol spray with very good success. At the present time the larynx is quite free from the growths. A similar method of treatment has been advocated for such growths in the ear. In this locality the applications are quite painful, and the results less satisfactory.

Dr. C. G. Coakley said, that soon after hearing Dr. Delavan's paper on this subject he had instituted the treatment in a case of recurrent papilloma of the larynx, with almost immediate improvement. The growths soon shrank in size and were subsequently removed. Up to the present time there are no signs of a recurrence.

Palate Hook.

Dr. Gleitsmann exhibited an instrument devised by Dr. Lindt, of Berne, Switzerland, and described by the latter in a recent issue of

the Archives of Laryngology. The instrument is introduced in a similar manner to the ordinary palate-hook, and by means of it the palate is drawn forcibly forward; this enables the operator to obtain a good view of the upper and rear-most portion of the rhino-pharynx without the aid of a mirror. Lindt, who has used the instrument for some time, states that he is also able to detect by this method an enlargement of the pharyngeal tonsil, if it is present, and, if necessary, remove remnants of that organ which have remained after curettement.

Dr. Gleitsmann said, that with this instrument he has been able to get a very good view of the rhino-pharynx, and in one case, where the patient was annoyed by the formation of dry crusts in this region, he found no difficulty in removing them with the forceps and then making proper applications with the cotton-carrier. If necessary, the actual cautery or other escharotic can also be used there.

Ozena in Its Relation to Diseases of the Accessory Sinuses.

Dr. T. J. Harris read a paper on this subject.

After referring to the fact that a discussion of the true nature of ozena had engaged the attention of the best rhinologists for many years without any settlement of this vexatious question, the author briefly reviewed the results of some of the more recent investigations. First among these he quoted the work of Ludwig Grünwald, whose inferences, after a very exhaustive study of the subject, were as follows:

1. An individual, pathological anatomical picture, attended by mal-odorous crust formation in wide noses, does not exist.
2. Any hereditary or anatomical disposition producing a condition called "ozena" does not exist.
3. In general, any peculiar inflammation of the nasal mucous membrane producing odor, with crusts and atrophy, is unproved.
4. The existence of a genuine atrophy is unproved.
5. That *all* cases of mal-odorous crust formation rest on sinus empyema is refuted.

On the contrary, it is proven:

1. That in a series of cases carefully studied, the secretion proceeded from foci of suppuration in various manners.
2. That the formation of crusts, as well as of odor, arises under different conditions.
3. That both conditions often occur together, but often each for itself, and as well with as without atrophy of the mucous membrane.

As a deduction of this, Grünwald concludes that the name *ozæna* has no correct usage, save in a symptomatic sense.

Dr. Harris said that when we come to consider Grünwald's arguments, we are compelled to admit that they are very reasonable in the main. He has certainly rebutted one of the chief objections to his theory, when he shows the result of the various autopsies on cases of ozena, which disclosed the presence of unhealthy sinuses. It will be observed, too, that he does not claim that disease of the sinuses is alone the cause, but what he designates focal disease; that is, areas of suppuration elsewhere than in the nose. The whole contention, in Dr. Harris' judgment, rests on whether such a disease as genuine atrophy ever exists. Most of us who have been observing our cases carefully must concede the important role of sinus disease in a large number of cases, and adenoid growths each one of us has recognized as a cause, but can we regard them the sole causes? Among the most important of recent investigations are those of Abel, who, in a careful bacteriological study of one hundred cases of ozena, found a characteristic bacillus, which he named the ozena-bacillus.

Dr. Harris said that of ten cases of ozena under his observation, five possess sinus disease; in one there are adenoid growths; one is due to syphilis and three did not show any involvement of the sinus. The six cases of focal disease are still under observation, so do not permit of any final report as regards the result of the operations. The speaker said that while this series is quite small, it is significant as being in line with Grünwald's results—70% showing involvement of the sinuses, according to his figures.

The following conclusions were drawn by Dr. Harris:

1. That there is no single, constant cause for ozena, and that ozena is rightly to be regarded only as a symptom.
2. That genuine atrophy—until recently unproved—from Loewenberg's studies, confirmed by Abel and Paulsen, in all probability does exist.
3. That focal disease, including especially disease of the accessory sinuses, while not the only cause, is a very important and common cause.
4. As a most practical conclusion for the rhinologist each case of ozena, in addition to being treated with the proper constitutional and local measures, is to be thoroughly and repeatedly examined for evidence of sinus involvement.

Dr. Bosworth said he took issue with almost every point in Dr. Harris' admirable resume of this subject. Grünwald's conclusions form a striking illustration of where our enthusiasm will carry us when we are trying to prove a point with which we are prepossessed.

Personally, he did not think there was any more connection between sinus disease and atrophic rhinitis than there is between atrophic rhinitis and cirrhosis of the liver. In atrophic rhinitis the process that we have to deal with is a cirrhosis—an atrophy of the glandular structures, and one of the most important elements is that there is a destruction of the great physiological bodies, namely, the turbinated bodies, which make the nose the most intricate and important part of the breathing apparatus. The turbinated bodies, in health, pour out about sixteen ounces of water per day, and when they are performing their physiological function, it is absolutely impossible for crusts to form. When their function is abolished, everything that comes into the nose is robbed of its water, it dries up and forms crusts which, when they are retained, rot and stink. There is the full clinical history of atrophic rhinitis. It is due to the abolition of function of those great physiological bodies.

We are told that it is difficult to make the diagnosis of sinus disease. We can all recognize sinus disease, but when we come to the question of which sinus is involved, that may be very puzzling. In sinus disease we have a chronic abscess, discharging pus; that pus pours into the nasal cavity and will remain fluid if the nose is in a healthy condition, while if the nose is dry the puss will form into crusts.

Dr. Bosworth said he had never seen atrophic rhinitis in children, and in his opinion it never occurs at an early age. A careful review of the cases that have come under his observation showed that the process of atrophy extends over a period of from six to eight years. Crust formation usually began in his cases between the ages of 16 and 21; then came cirrhosis of the mucous membrane followed by contraction of the tissues with obliteration of the blood vessels. The secretions, even of the atrophic mucous membrane, do not stink. Nature does not secrete a stench. The cirrhotic membrane secretes healthy mucous, which, in the absence of the turbinated bodies, dries and forms crusts which adhere closely to the membrane and cannot be expelled, and like all animal matter, after two or three days they stink. Now, in such a case, where do the cocci come in? The speaker expressed the opinion that the cocci of Loewenberg, described many years ago, are simply the cocci of putrefaction. It is very probable that we cannot have atrophy without fetor, unless it be in the very early stage.

Dr. Bosworth said he recently saw his first and only case of sinus disease combined with atrophic rhinitis. In that case there was purulent disease of both ethmoidal sinuses together with atrophic

rhinitis. Such a combination, he thought, must necessarily occur but rarely, as sinus disease belongs essentially to adult life, while atrophic rhinitis commences comparatively early and is worst between 30 and 40, subsequently undergoing some improvement.

Dr. Charles H. Knight said he wished to protest emphatically against the use of the term "ozena" as synonymous with "atrophy." The word ozena means a bad smell, and it should only be used in a symptomatic sense. While ozena does occur in atrophic rhinitis, it is by no means an invariable symptom of that affection. In some cases of atrophic rhinitis there is abundant crust formation with little or no fetor, and in other cases the crust formation is scanty while the fetor is very marked. This fact had suggested to his mind the possibility that the smell was due to some odorous property inherent in the glands or tissues and thus far undiscovered.

As regards the prognosis of atrophic rhinitis, Dr. Knight said he was less pessimistic than the reader of the paper. While it is true that there is scarcely any condition less amenable to treatment, still a fair proportion of cases are curable by judicious attention to hygiene and diet, combined with proper local treatment. As to the relationship between atrophic rhinitis and sinus disease it seems impossible to admit anything more than coincidence. The same obstructive hypertrophy that usually precedes the former *may* induce the latter.

Dr. Robert C. Myles said he differed with Dr. Bosworth regarding the frequency of atrophic rhinitis in early life, as it is not uncommon even in children four or five years old. A disease which has such clear and definite results must have a specific cause. The odor of atrophic rhinitis is no doubt due to the gases of disintegration; it is a peculiar odor, differing entirely from that due to syphilis or the presence of carious bone, and when once familiar with it a mere tyro can recognize it. Its persistency is another peculiarity, differing in that respect from the odor arising from the presence of carious bone in the antrum.

Dr. Myles said his own observations bear out the statement contained in Dr. Harris' paper that atrophic rhinitis is frequently associated with sinus disease. He recently reported such a case where, after operation on the antrum, the atrophic rhinitis was immediately relieved of the odor, incrustations in the fossa of the same side and the patient was entirely well seven months afterwards, when she was lost sight of.

Dr. Beaman Douglass expressed the opinion that atrophic rhinitis could not primarily be dependent upon sinus disease, as the latter is

in almost every instance secondary to nasal trouble. As regards the presence of a specific bacilli in these cases, the speaker said he did not think it was necessary to invoke the aid of such a causative factor. Inflammation, as we know, is not always explained by the presence of a bacillus; traumatism may be a cause of inflammation or chemical irritation may be equally potent.

Dr. Douglass said he had come to regard atrophic rhinitis as simply one of the results of inflammation rather than as a specific inflammation by itself. There is no more reason to believe that it is due to the presence of a special bacillus than there is that cirrhosis of the liver or locomotor ataxia or any other fibroid disease is due to a special bacillus. It is simply the result of a preliminary hypertrophic condition, the same as we see in other organs of the body. It is a bad result of an ordinary hypertrophic inflammation, occurring where there is an unhealthy environment, a debilitated condition from disease or an unfavorable heredity.

Dr. Adolph Rupp mentioned the case of a woman, 32 years old, whom he has had under his observation during the past fifteen years. In that time he has seen the turbinated bodies atrophy. In this case there is disease of the frontal sinus on both sides. The odor, which was very marked, has become much less noticeable under the use of oily sprays.

Dr. Rupp said he had never observed among children a single case where the clinical and pathological appearances were similar to those met with in the adult. He asked Dr. Myles what the clinical appearance of such a case, in childhood, is?

Dr. Myles replied that the turbinated bodies are shrivelled; there is crusting and an odor.

Dr. T. P. Berens said he did not believe there was any one cause for atrophic rhinitis. He had observed cases where the atrophy was due to adenoids and progressed until the latter were removed. In one such case, which has been under his observation for eighteen months, there was constantly increasing atrophy, with scab formation and odor, and with a steady diminution in the size of the turbinated bodies; six months ago he found adenoid growths in the vault of the pharynx, and upon the removal of these the scabs and odor disappeared and atrophy remained at a standstill. In some cases the atrophy is probably due to a retention of the secretions, with consequent disease of the glands and mucous membrane. There are also cases of frontal disease which produce atrophy in the anterior chamber of the nose, the posterior portion remaining comparatively free.

In a certain class of these cases sinus trouble certainly seems to play an important role as a causative factor.

Cirrhosis of the nasal mucous membrane, Dr. Berens said, is apparently not a disease, *per se*, because it occurs in comparatively young people. In other organs of the body this condition is rare below the age of twenty, while in the nose, he has seen it between the ages of twelve and fourteen years; he has never seen true atrophy in children below that age. The condition, it seemed to him, was due to some irritant applied directly to the mucous membranes.

Dr. Gleitsmann said the youngest age at which he had observed atrophic rhinitis was six years. The atrophy was very pronounced, there was an immense amount of crust formation and a persistent odor. The patient was under his treatment for about six years. At the end of that period there was no further odor, and the turbinated bodies, which had been completely shrivelled, were fully restored to their normal size.

Dr. Harris, in closing the discussion, said that until he had become conversant with Grünwald's work in this field of rhinology, he had never appreciated the possibility of associating sinus trouble with atrophic rhinitis; since then he had become convinced that sinus or other focal disease must be regarded as one of the causes of ozena. If the sinus disease is secondary to the nasal condition, why should we not be able to relieve the former by curing the latter?

Dr. Harris said that since he had given this subject more careful attention, he had been surprised to find that in many of these cases the crust formation is located high up in the middle turbinated region, about the hiatus semilunaris. This fact would indicate that the origin of the pus which forms the crusts is high up. In conclusion, the speaker mentioned the importance of a thorough search for evidence of sinus trouble in every case of atrophic rhinitis coming under observation.

A Case of Angioma of the Tongue. Presented by Dr. J. C. Sharp.

The patient was a girl 8 years old, with a tumor about the size of a hazel-nut on the side of the tongue. The growth had first made its appearance when the child was 1 year old, after a fall down stairs, resulting in an injury to the tongue. About three months ago the tumor began to increase in size and it is still growing. Dr. Sharp pronounced it an angioma.

THIRD ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Held in Washington, D. C., May 1 and 3, 1897.

FRANK HYATT, M.D., OF WASHINGTON, D. C., PRESIDENT.

FIRST DAY—SATURDAY, MAY 1st.

New Curettes—A New Cauterizing Instrument.

Dr. Lewis A. Coffin, of New York, presented two curettes, one of which he had found useful in removing the last fragments of adenoid growths. It could be used with the finger as a guide, or with the aid of a mirror and a palate retractor. The other curette was used around the posterior portion of the pharynx, and owing to its bent shank, it was easily introduced into locations otherwise difficult of access.

Dr. Coffin said that he had met with excessive hemorrhage in a case in which he had cauterized a posterior hypertrophy. The boy was not a "bleeder," because he had previously operated upon his tonsils without any such trouble. The hemorrhage had been checked at first by tamponing, but it had recurred nearly a week later with great severity. After much trouble it had been controlled, but after a week or ten days, had again recurred, and the boy had been left almost exsanguinated. Owing to this unpleasant experience he had been led to devise the instrument presented. It consists of an ordinary hypodermic syringe barrel with a long, curved beak through which monochlor-acetic acid can be applied directly to the part; the use of the monochlor-acetic acid left a peculiar slough, which remained *in situ* until cicatrization had taken place. He had not observed that the acid injured the instrument if ordinary care was used.

Dr. William Scheppepegrell, of New Orleans, said that he used an instrument arranged something like the Gottstein curette, except that it is heart-shaped, and the depression fits into the septum. Such an instrument, fitting as it did on both sides of the septum, allowed the work to be done very rapidly, as well as effectively.

Dr. Wendell C. Phillips, of New York, said that he had yet to see one of the modified Gottstein curettes that did not do most of the cutting near the tip. If it were used several times from above downwards, it would make only several small "ditches." Unless, therefore, the instrument was made so as to prevent this cutting at the tip, it should be condemned. Dr. Coffin's instrument seemed to him very valuable, particularly when used with the mirror.

Dr. H. Holbrook Curtis, of New York, said that he always completed his adenoid operations by introducing a large snare through

the inferior meatus, and bringing the snare up as far as possible. He had been surprised at the size of the mass drawn out in this way, and his results had been much better since adopting this plan.

Dr. Coffin said that in chronic catarrhal conditions of the nasopharynx a light curetting of the surface before the application of the various solutions would be found very beneficial.

Dr. Robert C. Myles, of New York, said that his objection to the heart-shaped curette was that on several occasions he had known the child to twist the head to one side and cause the sharp process of the instrument to dig into the upper wall of the Eustachian tube. It was almost impossible to keep the curette in the middle line of a child's head. In his work, a small pair of post-nasal forceps, with large fenestra had served him well in removing growths under ether.

Dr. Scheppegrell said that he had seen more complications follow the use of the forceps than any other method. For instance, otitis media had followed the use of the forceps in expert hands.

Dr. William H. Daly, of Pittsburg, said that the instruments just presented would probably be still more convenient if made with lighter handles. In removing adenoids with forceps it would be found desirable, in the case of sessile adenoids, not to attempt to tear these away, but simply to crush them. They would be absorbed within three or four weeks and leave the mucous membrane in a healthy condition.

President's Address.

Dr. Franck Hyatt, of Washington, D. C., delivered the address. He touched upon some of the more noteworthy achievements in the past year in the branches of medicine coming within the scope of the society. In the recent Congress, he said, seventy-five per cent. of the papers had been devoted to Rhinology. An especially interesting contribution was one on ozena, in which it was claimed that a large percentage could be cured by the application of the electric current—20 milliampères for 20 minutes at a time. One contribution emphasized the value of the electric current (12 to 27 m.a.) continued from 10 to 27 minutes for the removal of small spurs. In the Vienna Congress the prevailing sentiment was opposed to the radical surgical procedures that had been advised in Germany, especially for the treatment of antrum disease. It was also agreed that too much stress had been laid upon the teeth as a cause of such disease.

The accessory cavities were discussed also before the British Society of Laryngology, Otology and Rhinology. Here it was stated emphatically that operations in frontal empyema should not be con-

sidered successful unless drainage was provided through the nose. The ethmoid cells were treated of in three scientific papers. Mackenzie had brought forward proof of the incorrectness of the statement that suppurative inflammation of the ethmoid has a tendency towards necrosis. He also said that there was no special tendency in these cavities to myxomatous conditions. A number of authors had called attention to the lingual tonsil during the past year, and had spoken of the significance of pathological lesions here. Lennox Browne, in 1547 cases of nose and throat disease, had found the lingual tonsil varicose in 438 of the cases, and in 37 per cent. of these there was also hypertrophy of the gland. Macintyre had made a report bearing upon the value of the X-rays in investigating diseased conditions of the nose and throat.

Otology had also shown commendable activity in the past year. The importance of asepsis in connection with the ear had been strongly urged, and cerebellar abscess had been made the subject of many important contributions. In mastoid operations, it had been found that the best results followed frequent dressings.

Chronic Non-Suppurative Otitis Media.

Dr. S. MacCuen Smith, of Philadelphia, said that the nasopharynx must necessarily be considered in this connection because of its important etiological relations to the subject under consideration. For clinical purposes it was sufficient to regard the several varieties as different stages of one disorder, beginning with a simple catarrh, and ending with advanced trophic changes, involving the internal ear, and attended by deafness and tinnitus. The author did not believe that the general health had any material influence on the development of the disease under consideration, except in the case of syphilis. The true underlying condition was a catarrh of the nasopharynx. There would be found more or less obstruction of the Eustachian tube, marked retraction of the membrana tympani, with thickening, misplacement of the ossicles, and the whole bound down by firm adhesions to the promontory. If, in addition, there was impaction or bony union of the stapes to the foramen ovale, it was not to be wondered at that efforts at relief met with comparatively little success. Not only must the catarrhal condition of the nose and throat be controlled, but free nasal respiration must be established. It seemed foolish to hope for relief in cases of ankylosis and adhesions without first securing liberation of the membrana tympani and ossicles.

The treatment should be an incision into the membrana tympani along the entire length of the handle of the malleus. Through this a

small knife should be introduced, and the adhesions divided. With a small hook, efforts should be made to break up the adhesions. A few drops of sterilized albolene should then be instilled into the tympanic cavity. The canal should be filled with iodoform gauze, care being taken that it does not impinge on the membrana tympani. The gauze should be removed on the third or fourth day. Massage of the ossicles at intervals of three or four days was next in order. In the experience of the writer additional injections of oil could be made into the drum-head. From ten to twenty hypodermic injections of the hydrochlorate of pilocarpin, at intervals of two or three days, might be given with advantage. Phosphorus and strychnine should be administered internally. Of course, the naso-pharynx should have received proper treatment before beginning this line of treatment. As a result of a large number of experimental observations during the last few years, on the cure of this disease, he had come to the following conclusions: (1) That the best result was obtained from the treatment just outlined; (2) that this operative procedure was practically without risk, and, hence, should be adopted before a more formidable one; (3) the majority of cases could be relieved of tinnitus and vertigo if there was no labyrinthian disease; (4) that chronic cases with internal ear involvement did not offer hope of improvement in hearing, but might be relieved frequently of the tinnitus and vertigo; and (5) that excision of any part of the conducting apparatus was only justifiable for the relief of tinnitus and vertigo when other measures have failed.

Dr. Sargent F. Snow, of Syracuse, said that the long-standing cases of ear trouble, with a history of deafness for ten or fifteen years, were usually looked upon with indifference. He had done this himself up to the last three years. The prospect of relief depended not so much on the amount of deafness as upon the amount of retraction of the drum and dislocation of the ossicles. The all-important point was to thoroughly remove from the nasal passages all growths causing obstruction. In the very chronic cases good results must not be looked for if such treatment were speedily followed by operative measures, but if the latter were deferred until nature had time to restore the natural condition of the mucous membrane, the outlook would be far better. In his opinion, the best treatment consisted in repeated and thorough stimulation of the parts. He used camphor and iodine vapor, introduced through the Eustachian catheter under a good air pressure. This application seemed to tone up the relaxed mucous membrane of the middle ear, and relieve the catarrhal condition of the parts. A case was cited of a man who had come under

his care in 1894. This man could not hear a loud whisper with the left ear, but could hear in the right ear at a distance of five inches. The nasal passages were cleared out, and since last October he had been treated with the camphor and iodine vapor, twice a week. In the left ear he could now hear at a distance of forty-eight inches, and in the other at a distance of eight feet. The speaker said that the great improvement observed in this case had been duplicated several times in his experience. Many practitioners had failed to introduce the vapor fairly into the middle ear cavity. It could not be done in every instance by a light air pressure, and hence he used the air from the reservoir, sometimes under a pressure of eighteen or twenty pounds.

Dr. Scheppegegrell, referring to the use of the pneumatic speculum, said that in the majority of the cases so treated in which there were some ankylosis and adhesions, the exhaustion and compression affected chiefly the more yielding parts—the parts which it was not desired to treat; hence, the use of this apparatus would seem to be very limited. Regarding the use of the Politzer plug, he said that the retention of this vacuum for a number of hours would be apt to cause at the same time a congestion, principally of the drum, but also of the surrounding parts.

Dr. E. E. Holt, of Portland, Me., said that in the early days of his practice it had been his custom to make an opening in the membrane and even introduce a stilette. At another time, the practice was to cut the tensor tympani muscle. Each case of aural disease should be treated individually. The history would often lead one at first to give a very bad prognosis. He had used the plugs for a long time, and thought he had derived some benefit from them. The naso-pharynx should receive careful attention. In the treatment of this disease it was very important to keep the patient busy.

Dr. Ewing W. Day, of Pittsburg, said that there was a certain class of cases in which no improvement followed a careful treatment of the nose and throat, and of even division of the adhesions in the ear. He cited a case of extreme deafness in which he had removed the ossicles entirely. As a result, the patient was able to hear ordinary conversation at a distance of three feet. He had probably operated upon a dozen cases in this way during the past year, and fully eight had been decidedly improved, while the remaining four were neither better nor worse. The vertigo following the operation was sometimes very distressing, persisting in these cases for a week or more.

Dr. R. C. Myles asked how many of these cases had been oper-

ated upon over a year, and if Dr. Day had succeeded in finding the foot-plate of the stapes?

Dr. Day replied that the last case had been operated upon in January, 1897. He had a collection of the ossicles, including the foot-plate. The improvement would be greater at first than afterward, but it had remained fairly constant after the third week. Some of the cases had been under observation for about two years.

Dr. H. H. Curtis spoke of the use of the olivary bougie, with a mild galvanic current passed through the Eustachian tube.

Dr. J. E. Nichols said that in cases in which the tube was at all closed up, the Valsalva method of insufflation was injurious, because the mucous membrane, in a state of turgidity, was pressed up against the Eustachian orifices, and thus prevented the proper entrance of the air. It was also injurious, because if the difficulty were unilateral, the normal ear would be deleteriously affected by the hypertension. In cases of sclerosis of the membrane, the pneumatic speculum could be used, but it was injurious in cases of atrophy. The pressure applied from the outside causes an extra yielding of the already thin surface, and no effect on the ankylosed ossicles. Moreover, the tinnitus was increased.

Dr. Sprague said that he had been with Dr. Jack in his first stapes operations, and he had certainly obtained many excellent results. Some of these stapes operations had been followed by no result whatever, but in other cases there had been an infinite amount of harm. He had known persons to be afflicted with vertigo and other distressing symptoms for many months after the removal of the stapes.

Dr. Scheppegrell said that he had used electrolysis in cases of stenosis of the Eustachian tube, and he could assure any one that it was exceedingly difficult to pass a metallic instrument into the Eustachian tube without perforating the tube. With the dispersing electrode placed on the neck, a current of five milliamperes would cause vertigo in almost all cases. The method was not only of little value, but was decidedly harmful. In the application of a current of even five milliamperes through a small probe, the current would be so concentrated as to cause an ulcer in most instances, and if so, this would result in stenosis. Where there was already an obliteration of the canal, it was a different matter, yet even here the results were nothing like as good as in electrolysis of the urethra, where the urine keeps the calibre open.

Dr. W. H. Daly thought it was much better for the practitioner to test the strength of the current upon his own tongue than to trust to any milliampere meter.

Dr. Smith, in closing, said that of course the operative measures should not be undertaken until other measures had failed. The object of massage was to produce exhaustion and compression, and the exhaustion should occur before the compression, for if this order were reversed vertigo would result.

Laryngectomy—Case and Specimen.

Dr. Charles W. Richardson, of Washington, D. C., reported a case of laryngectomy for malignant disease of the larynx. In April, 1896, he had been asked to see a well nourished man with a good family history, and with no evidence of syphilitic taint. A red growth, about one centimeter, sprung from the left wall of the larynx, just above the cord. Examination of the growth, after removal, showed it to be an epithelioma. At the time of the operation, last December, his general condition was bad, and the cancerous cachexia was evident. He suffered from paroxysms of severe dyspnoea, and could sleep and eat but little. There was no pain in the laryngeal region, nor any of a reflected character at any time. There was no infiltration or involvement of neighboring glands. Both cords were destroyed, and their places occupied by nodular new growths of a whitish appearance. On December 12, 1896, a preliminary, low tracheotomy had been done. On December 19, laryngectomy was performed, using Gerster's tampon canula. During the operation some trouble was experienced from profuse hemorrhage, owing to the accidental division of a deep vein. The upper end of the œsophagus was stitched subcutaneously to the upper end of the transverse wound so as to close off completely the pharyngeal cavity. The epiglottis was left *in situ*. During the first day after the operation the patient seemed much more comfortable, and the temperature was 99 degrees F. On the evening of the second day, the patient suddenly became much worse, and he died shortly afterward from acute œdema. Examination of the larynx after the operation showed that the extent of the growth was far greater than had been supposed, as it filled the whole interior of the larynx, and even extended into the trachea. It seemed to him better surgery to unite the flaps and close the wound instead of the usual plan of using gauze packing.

AFTERNOON SESSION.

Papilloma of the Larynx Recurring as an Epithelioma—Report of a Case.

Dr. M. R. Ward, of Pittsburg, read a paper with this title. (See page 24, July issue of THE LARYNGOSCOPE.)

Dr. James C. Kerr, of Washington, D. C., reported a case of

laryngectomy for malignant disease. Tracheotomy was performed about one month before the laryngectomy became necessary. The points which decided them in favor of the operation in this case were: (1) The strong probability of the growth being carcinoma; (2) the growth was distinctly confined to one side of the larynx; (3) there was no involvement of the lymphatic glands or of the tissues outside of the larynx. The patient was a woman, fifty-four years of age, who had long been in poor health, and whose kidneys were especially inactive. The daily quantity of urea did not rise above 180 grains, and was often much less. In addition to this, the heart action and digestion were poor, and she was quite neurotic. It was hoped that a partial laryngectomy would be sufficient. The operation itself presented no special difficulties up to the time of splitting the cricoid cartilage behind. On opening the larynx it was found that the growth completely blocked the larynx, but was quite adherent on the right side. The patient's strength had been fortified prior to the operation by the administration of atropin and saline enemata, and at the time of the operation the head was placed lower than the body. At the close of the operation the patient's general condition was exceedingly satisfactory. Instead of using the balloon tampon canula of Trendelenburg, a piece of compressed sponge was substituted for the balloon, and as soon as it became moistened with the secretions the sponge swelled and tightly closed the opening. This device acted admirably. The patient did very well at first, and although there was no evidence of septic pneumonia or other complication directly connected with the operation, her strength gradually failed, and she succumbed at the end of the first week.

Dr. Phillips said that he had come to believe that in the majority of cases a growth once benign was always benign, and one once malignant was always malignant. In a case of his own, almost everything pointed to a benign growth—a papilloma—yet microscopic examination showed it to be undoubtedly an epithelioma. One-half of the larynx was removed by operation, and at this time there was no evidence of secondary involvement. The operation was done last November, and up to the present time there had been no evidence of recurrence. These cases seemed to die invariably after operation. He did not believe that, on an average, life was prolonged by such operations. Some observers advised early tracheotomy in these cases, and it would be noted that the symptoms of the disease would suddenly abate after a preliminary tracheotomy. If any operative procedure were to be undertaken it should be the radical one, for partial removals seemed only to hasten the progress of the disease. For

this reason, he believed that thyrotomy was to be condemned in every instance.

Dr. Myles said that about one year ago a patient had come under his observation with a malignant growth. Two specimens had been examined microscopically, but with no very definite result. He then made a deep section with the Heryng double excisor curette, and obtained a specimen for examination, at the same time insisting that the patient should be operated upon at once after such interference, if the growth proved to be malignant. The microscopist reported that the growth was undoubtedly malignant.

Looking over the literature of the subject, he had found that it was a most dangerous operation, the patient dying frequently, either from septic pneumonia or from a peculiar condition of asthenia. The patient, who was very anxious to have his larynx removed, submitted to an operation by Cohen's method, which was performed by Dr. J. A. Bodine, of New York. The larynx was completely removed, and all connection with the rhino-pharynx cut off. The healing process was kindly, but there was much trouble from drying of the mucus in the trachea. It was now about a year since the operation; the man had gained twenty pounds or more in weight, and his voice was fairly distinct. This was a good result, but, in his opinion, it was an exceedingly exceptional one. There was, at the present time, considerable mystery connected with the deaths of some of these patients, who apparently do well for about a week and then suddenly die.

Dr. John A. Thompson said that he believed that laryngectomy was now passing through the same period that ovariectomy had passed through in the early days. We should consider the *technique* of the operation, and the methods to be pursued to avoid these sudden deaths after operation. When the patient became cyanotic before coming from under the influence of the chloroform, he believed, it was due to the packing in the trachea. In operating for carcinoma he believed it was a mistake to do a preliminary tracheotomy. It was better to anesthetize the patient through the natural channels until all the preliminary dissection had been done. In this way there was absolutely no danger of blood or septic matter getting into the lung.

Dr. W. H. Daly said that for some years past he had believed that the clinical history of the case would help us more than the microscopical examination. For the last few years he had allowed these cases to go about with no other operation than the preliminary

tracheotomy, believing that they should be allowed to die peacefully without subjecting them to this disgusting and revolting operation.

Dr. Arthur G. Root, of Albany, thought a preliminary tracheotomy was useful as it put the larynx at rest. He was firmly convinced that a larynx, the seat of a malignant growth, should be left alone. Regarding the statement about intra-tracheal pressure bringing on syncope, he said that this did not tally with his own experience with intubation. Where he had seen syncope follow intubation, it had not seemed to him to result from the pressure of the tube, but rather from the pushing down of membrane before the tube, or from the fact that the tube was so small that sufficient air was not admitted.

Dr. Ward said that the laryngologist should not undertake a capital operation like laryngectomy, although it was not an especially difficult operation in the hands of the general surgeon. His case had been presented simply to increase the statistics. He was of the opinion that transformation of originally benign growths might take place. He thought it was pretty well settled that carcinoma was a secondary growth of proliferating tissue; hence, in a place like the larynx, which was subject to so much irritation, it was not improbable that a benign growth might undergo malignant transformation.

Dr. Phillips said that all seemed agreed as to the advisability of the preliminary tracheotomy. Chloroform was the anæsthetic which should be chosen on account of the diminished danger of irritating the lungs. Much depended in these operative cases upon the after-treatment. He favored having the room kept at 75° F., and the air quite moist.

Dr. Scheppegegrell referred to the treatment by metallic electrolysis. About six months ago he had tried the method on an epithelioma of the larynx and base of the tongue, with the idea of relieving the pain. It was applied to the growth at the base of the tongue, and to his surprise the three nodules almost entirely disappeared within three weeks. Further treatment was abruptly stopped by an inter-current disease. The advantage of this treatment was that the zinc salt was carried by the current deeply into the tissue. In the future, he would be inclined to advise first a tracheotomy, and then metallic electrolysis.

[TO BE CONTINUED.]

WESTERN OPHTHALMOLOGICAL, OTOLOGICAL, LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

Second annual meeting, held at St. Louis, April 8th and 9th, 1897. Adolph Alt, M.D., President; Hal. Foster, M.D., Secretary.

Adenoid Vegetation.

Dr. Ellet Orrin Sisson read a paper on "Adenoid Vegetation." See page 333, June issue of *THE LARYNGOSCOPE*.

Dr. A. E. Bulson, Jr., Fort Wayne, Ind., stated that Dr. Sisson's paper was of great interest to him, as adenoids were so frequently met with. He thought that there was no doubt but that adenoids and enlarged tonsils had a marked deteriorating effect upon the development of children's minds. He had noticed, among the children at the State Institution for Feeble-Minded Youths, at Fort Wayne, Ind., a surprising number of cases of enlarged tonsils and adenoids. The matron and nurses of the institution reported that after operation for the removal of these abnormalities the children seemed better and brighter. One case, in particular, a boy who was practically an idiot, was markedly changed for the better in character; he became docile and interested himself in various pursuits about the farm. He also called attention to the effect of adenoids upon the hearing. The method of removal, in the doctor's opinion, was unimportant; as to whether aseptic methods should be employed or not in the examination, he thought, was somewhat farcical, as the cavity was generally filled with muco-purulent secretion. Ordinary cleanliness was all that was required.

Dr. A. C. Corr thought that the proper removal of adenoids certainly tended to longevity and happiness of the human race.

Dr. K. K. Wheelock, Fort Wayne, Ind., called attention to the prevalence of follicular conjunctivitis in conjunction with adenoiditis.

Dr. M. A. Goldstein, St. Louis, believed in thorough asepsis in adenoid operation. After the cutting or curetting, he followed the German plan of smoothing down the ragged parts, by means of friction with the finger swarthed in iodoform or bichloride gauze.

Dr. Sisson, in closing the discussion, again dwelt upon the benefits derived from, and the necessity of, asepsis in operations in the nasal cavities.

Report of a Case of Double Mastoid Disease.

Dr. J. O. Stillson, Indianapolis, read a paper on "Report of a Case of Double Mastoid Disease." Will be published in August issue of *THE LARYNGOSCOPE*.

Dr. Goldstein agreed with the author as to the necessity of rapidly cutting short the condition of affairs when the mastoiditis demanded operative relief. He spoke of the use of a little electric lamp, covered with a tight-fitting rubber tube, the distal end of which tube is placed over the mastoid area, which is supposed to be involved. A large vulcanite funnel, with an aural speculum secured in its apex, is placed in the external auditory meatus, and the room

darkened. Upon illumination with the lamp, if the mastoid cells are pervious, the membrana tympana will be translucent; if serum, pus or granulation tissue is contained within the cells, no light is transmitted, the drum appearing dark. By this method he had successfully determined the presence of pus and granulation tissue in several cases of mastoiditis of long standing.

[TO BE CONTINUED.]

BOOK REVIEW.

Malignant Disease of the Larynx and its Radical Treatment.

(By Dr. Johann Sendziak, of Warsaw, Poland.)

The author has received deserving recognition for his excellent treatise (in german), by being awarded a prize from the medical society of Toulouse. His writing demonstrates that he has thoroughly searched the literature upon this distressing disease, and he gives to his reader not only his personal experience but that of other eminent authorities as well.

Under the heading of malignant disease of the larynx he describes two forms of growth; i.e., carcinoma and sarcoma.

He discourses at length as to the history, actiology, pathological anatomy, symptomatology, duration, diagnosis, prognosis and therapy.

The author does not believe in the "irritation theory" as a causative factor. Neither does he believe that the infectious nature of the disease has as yet been emphatically established. He reports a case, however, in which a brother of an individual suffering from ulcerating carcinoma of the upper larynx, showed a malignant process of the base of the tongue and epiglottis, shortly after using some instrument to touch his own pharynx, which his diseased brother was in the habit of employing.

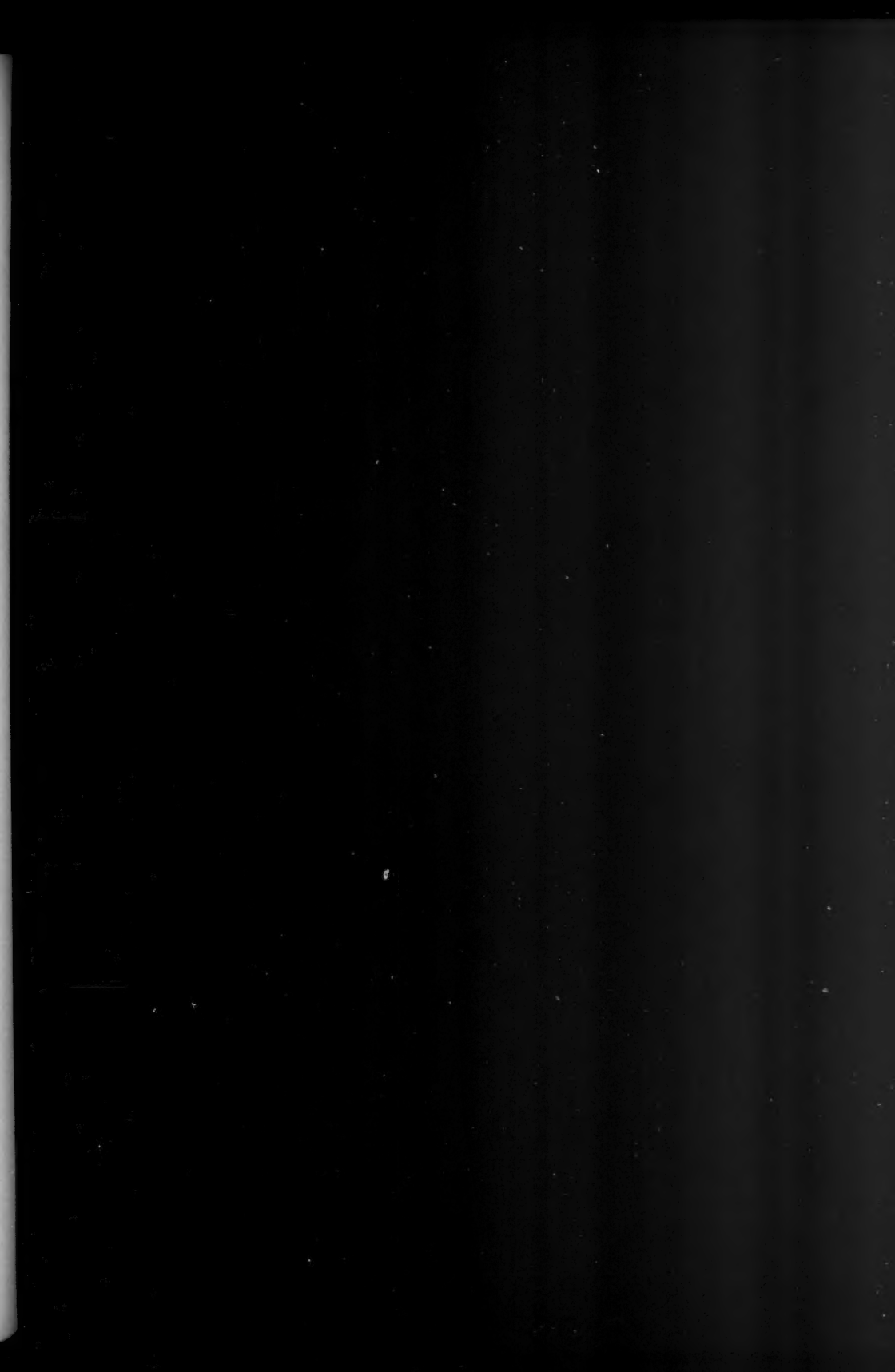
The microscope is not always a criterion in arriving at a correct diagnosis. Many errors have been made by relying solely upon this otherwise valuable adjunct.

The differential diagnosis of malignant disease is carefully considered. The time is passed, says the author, when the patient with malignant disease of the larynx is merely permitted to vegetate. He believes that with our present knowledge a better prognosis can be offered.

Various methods of operating for the removal of the growth are instructingly described in the chapter on therapy, and numerous cases are cited in tabulated form. These tables describe the complete record of each case, with the method employed, and certainly enhance the value of this serviceable publication. A few illustrations demonstrate some forms of cannulae employed in the laryngectomies.

The paragraph topics make this book a ready reference number, and permits the reader to find individual subjects at his pleasure. When we consider that the author has consulted 677 references in offering this monograph of 224 pages, we must naturally conclude that his work is indeed exhaustive. Unfortunately, the book is bound in paper. It is well printed, and is the product of J. T. Bergmann, of Wiesbaden.

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IN THE TREATMENT OF

Typhoid

DR. B. D. HARISON, in *The Physician and Surgeon*, Detroit, Mich., Nov., 1896, says: "To eliminate the toxine and to promote skin drainage, I prescribe lactophenin. * * * It acts like phenacetin, but more slowly;

has a more calming and hypnotic effect, with no effect upon the heart except that the pulse becomes fuller and slower, while the breathing is unaffected. A moderate dose, 5 to 10 grains, is given every second hour if the temperature rises above 102°F , until perspiration is produced. I cannot speak too highly of lactophenia as an antipyretic and hypnotic. I have used it altogether in my practice during the past three years to the exclusion of all other antipyretics, with never the slightest depressing effect upon the heart or circulation."

DR. W. C. BUCKLEY, in *THE LARYNGOSCOPE*, Feb., 1897, says that lactophenin applied locally is excellent treatment for tonsillitis. He continues: "It reduces abnormal temperature, but does not seem to exert any marked influence upon the circulation or respiration.

"I have used it in pneumonia, influenza, scarlatina, acute tuberculosis accompanied by fever and septicæmia, with excellent results.

"In the high temperature and restlessness of enteric fever (typhoid) it has also served me a most excellent purpose; here a child may take one or two grains with pleasant effect. The full adult dose is from four to sixteen grains. In giving this remedy, the proper plan is to begin with small doses, and increase according to effect produced."

DR. F. GORDON MORRILL, Visiting Physician at the Children's Hospital of Boston, Mass., in *Archives of Pediatrics*, March, 1897, in a report on the Treatment of Typhoid Fever in Children, says that they employ lactophenin, in 3 to 8 grain doses, which "are very effective, and do no harm, as far as my experience goes;" lactophenin produces a drop of 3.5°F . in four hours, according to their careful records. "Restful sleep may often be obtained in this way."

Quinsy

DR. J. HOMER COULTER, in *The Journal of the American Medical Association*, Nov. 7, 1896, says "In two cases I prescribed lactophenin, 10 grains every three hours; after the second dose Mr. B. was almost entirely relieved

of pain. In the case of Mr. R. the third dose relieved him quite as completely.

* * * I have used the remedy in twelve cases of quinsy, and in all but once instance the results have been most gratifying. * * * I have in these cases given the lactophenin to the exclusion of every other remedy internally, excepting the cathartic. * * * Its action is decidedly more prompt (than salol, etc.). It has thus far given no undesirable after-effects; it not only relieves the pain, but reduces the fever with an equal certainty."

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